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## THE CARE OF THE PATIENT

### THE ART OF MEDICINE *


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PITTSBURGH


"Doctor," said an astute old lady when introducing herself to an apprentice in the practice of medicine, "Doctor, I should rather encounter a mad dog than a new physician." At the time, the recent graduate did not understand the profound significance of this remark: his training had been almost entirely scientific.

During the World War, widespread disability arose among soldiers of the participating armies. In a large group the patients complained of palpitation, of dyspnea and of a sense of exhaustion after effort. They were often cyanotic. On exertion, their hearts became very rapid. The results of vasomotor disturbances were apparent. The patients were profoundly emotional, the predominant emotion being that of fear. Symptoms and signs were present which suggested an underlying dysfunction of the ductless glands. Yet neither heart disease nor disease of other organs could be demonstrated.

It was impossible to affix a satisfactory label to patients of this group. The terms *effort syndrome* or *neurocirculatory asthenia* were finally adopted, and this because these terms did not suggest the presence of a single underlying cause. The discarded terms were soldier's heart and disordered heart action. Etiologic factors were found, but they were many and diverse. Some were inherited, others acquired. The disturbances usually arose because the patients were not able to bear the burdens which the stress of war imposed on them. A fairly satisfactory method of treatment was subsequently evolved. This treatment could not be based on scientific deductions. Success came through the art of medicine.

### USE OF EXPERIENCE AND INSIGHT

The term art of medicine cannot be satisfactorily defined. For the purpose of this discussion I will apply it to that field of medicine in which the care of the patient is governed primarily by the clinical experience, by the insight and intuition of the practitioner. No rigid distinction as between art and science can ever be drawn, for the scientist is constantly employing art in the carrying out of his investigations, whereas art tends to become self-conscious, to formulate rules of conduct, and so to become scientific. To practice art without science constitutes charlatanism. To practice science without art is to disregard the personality of the individual who seeks relief. The nature of the art of medicine, like that of the Boojum, is more easily apprehended than comprehended. Its nature may be best apprehended by comparing it with the science of medicine. For the following contrasted statements I am indebted to several sources—the Oxford English Dictionary, Fowler's Modern English Usage, and the writings of Dr. Peabody and of Dr. John Brown. To the latter I am especially grateful both for his wise counsel and for his whimsicality. He was himself a master of the art of medicine. He was loved by his patients. Thus, "the greatest slave holder of his time and the kindest, when he died he did not set a single bondsman free." To him we are indebted for those wonderful stories, Rab and His Friends, and Marjorie Fleming: stories which are infinitely touching and which should be read by every young physician.

"Art knows little of its birth," say these authorities; "science knows its birth; registers it and its after-history. Art is founded on experience; science is antecedent to experience. Art invents; science discovers. Art comes out of darkness . . . goes upon its own feet, can go anywhere across the country, and hunts more by scent than by sight; science goes upon wheels but must have a road or a rail. Art furnishes a set of directions which vary with the artist and the task; science furnishes a body of connected facts which are the same for all people, circumstances and occasions. Art is often life-rented and dies with its possessor; science is transmissible. Art is completely personal, deals with actual problems of human conduct from economic, psychological and legal as well as from medical points of view; science is entirely impersonal, proceeds in an orderly manner toward the establishment of a cause, and, if possible, to a remedy for disease. Art shows the how and cares less about the why; science says little as to the how but much as to the why. Art runs for the stomach pump while science studies the phenomena of the poisoning."

"Wisdom is the vital union of art and science. . . . It is more excellent than either; wisdom is the body animated by the soul, and the will knowing what to do and how to do it." "Art is often the strong blind man on whose shoulder the lame and seeing man is crossing the river."

The history of this art of yours and mine is full of interest. To its further development, members of the faculty of the Medical School of Harvard University are making important contributions. Looking backward, we see such masters of my generation as Osler, Shattock, Pepper, Mackenzie, Allbutt. We follow the silver cord and are led to Louis, Graves, Astley Cooper, John Morgan, Sydenham. The cord is loosed during the medieval period, but here we dimly discern the followers of Mahomet and of Christ ministering to the sick. "He who has restored life to a man," says the

* Lecture delivered at Harvard University Medical School, Feb. 12, 1930.

Koran, "shall be accounted as if he had restored life to humanity." As early as the sixth and seventh centuries A. D., Saints Cosmas and Damiamnos are said to have worked healing miracles. Follow the cord from Constantinople to Rome, to Alexandria, to Athens, to Cos. Here pause for a moment in silent tribute. Sudhoff says, "Blessed is the man of science who enjoys the great companionship of the ancients. They are flesh of his flesh, sharers of his successes and failures, of his joys and deceptions. . . . Whatever is Greek must in the end prevail."

But the sick had long been cared for when the hippocratic writings laid down the principle that, "in medicine, we do not think it is proper to have recourse to hypotheses; the unknown should be reached from the known: teaching should be accepted from the most simple men if they appear to know something decisive in respect to a given thing." The followers of Aesculapius placed their temples in the most healthful surroundings, developed treatment by suggestion, and supplemented it by the application of hydrotherapeutic measures. These practitioners were debtors in their turn to the wisdom of past generations. We do not know the names of their masters, but Sudhoff surmises that the fact that funeral rites were celebrated by our earliest known ancestors, the men of the stone age, is presumptive evidence that they took care of the living.

### ACQUIREMENT OF THE ART

Such men as have been fortunate in their inherited and acquired characteristics most easily develop the art of medicine. This is especially true if they have a love of books. In the care of the patient, a knowledge of psychology is of first importance; but, as Dr. Edsall has said, wide reading is far better training in psychology than is any merely formal study of the subject. Nevertheless, many physicians who have been expert in their art have received most of their early training as a result of the lessons of adversity. They have reached port after sailing an uncharted sea where they had to depend entirely on their own efforts.

In most medical schools today, instruction in the science of medicine is very efficient; in few of them is the art systematically or even consciously taught. Through the influence of tradition on his habit of thought, through following the conscious or, better still, the unconscious example set by clinicians whose personality he has admired, rather than through the application of remembered precept, the practitioner may at times receive guidance as to the care of his patient. But the instances in which these influences will be consciously applied will be relatively rare.

The faculty of the Harvard University Medical School recently instituted in the curriculum changes which are of great importance and which will influence the teaching methods of other schools. The faculty had previously "infiltrated the entire curriculum with the science of preventive medicine." It is now infiltrating it also with the art of caring for the patient.

Dr. Edsall believes that in a modified form the apprenticeship system will become enduringly grafted on the modern course. In his belief I concur. But no method of application of the so-called preceptorial plan has yet proved wholly satisfactory, nor will any plan that is fairly well adapted to one community be found equally useful in another. In any case there are certain weaknesses inherent in any system of preceptorial training. It is difficult to get good teachers, and frequently impossible for these men to maintain their initial enthusiasm. Students' minds are, moreover, often too immature to permit them to benefit from the contacts brought about; habits of systematic study once interrupted may not be resumed; the conditions under which extramural students must live may impose an undesirable additional expense.

As a member of the faculty of another medical school, I approved of a preceptorial course, not perfect, but inaugurated in its curriculum for the year 1928-1929. In accordance with a tentative plan, groups of one fifth of the senior class were placed in rotation with selected practitioners living in nearby towns. After the system had been tried out for a year, a joint meeting of the participating students and a faculty committee was held. Asked to vote as to whether the course should be continued or abandoned, 90 per cent of the students voted in favor of its continuance, and this in spite of the additional expense. Regarding the preceptorial course, a student of the class of 1929 has written me as follows: "The work was of untold benefit to those engaged in it. . . . We were at last brought into contact with patients in their homes. The training which we received . . . instilled confidence. In returning to school, most of us felt that we had developed a keener insight . . . that we could receive our instruction with better understanding."

I cannot leave the subject of undergraduate training without a brief reference to a project now under discussion by the faculty of the Yale University School of Medicine. The Yale plan is to be applied in an attempt to force the student to consider from the beginning of his professional training the actual problems of human life. The results of its application will be awaited with interest.

You will find as young graduates that the years which you devote to full-time laboratory work or to service in a hospital will yield rich reward. Unfortunately, the experience will lie almost entirely in the field of the medical sciences. You will learn in the laboratory little of the art of medicine and may even acquire a habit of mind that is hostile to it. In the ward, in private rooms or in dispensary services, you will learn something of the art; but your opportunities will be very limited because your relationship with a patient will probably be impersonal, while efficient care of your future patients will depend on a relationship that is intensely individual.

In 1918, I was ordered from France to England in order to discuss the effort syndrome with Sir James Mackenzie, Sir William Osler, Sir Thomas Lewis and other specialists. The purpose of the trip was that on my return I should be able to recommend efficient treatment. I drove with Dr. Mackenzie on the last day of his practice in London. I told him that I regretted that I had spent so many years in general practice. Had I had more laboratory training, I might have better fitted myself for my present job. "You have something of greater value than laboratory training," said Dr. Mackenzie. "You have clinical experience. I know a scientist who is a hound on the scent: he runs down his quarry and fixes a tag to it. He is content with that, but he has not done anything for his patient."

Skill in the care of the patient must be acquired during the posthospital years. It is best developed under the conditions of general practice, and I advise all young men to enter specialties only after they have spent several years in general practice. The lessons there learned will never be wholly forgotten.

### NECESSITY OF KNOWING THE PATIENT

To the physician, his patient must always be a psychophysical entity, not a diseased organ or group of organs. In the presence of organic disease, emotional disturbances may be brought about by the disease itself, while emotions in turn may aggravate the disease. Often, because of their lack of any demonstrable disease, sick people are said to have nothing the matter with them. But in these cases social readjustment, lightening an overload of responsibility, judiciously applied psychotherapy and other methods of medical treatment may effect cures. In devising any plan of treatment, the physician must remember that, as Dr. Riggs has said, treatment must not only affect the emotions; it must be affected by them. The care of these patients will not be successful unless the entire history is known. Such a history is often difficult to obtain. It is necessary to break down certain natural reticences which may lead a patient to guard his statements or even to misrepresent the facts. The history must be taken by the clinician himself.

A man of 54, vice president of a great corporation, recently consulted me as to relief of the following symptoms: sense of exhaustion, headaches, insomnia, diarrhea. The preliminary history, as obtained by my competent assistant, was almost without interest. Yet I subsequently learned that this patient was going through a period of intense anxiety because of unsatisfactory financial conditions. He would become so tired by the middle of the afternoon that his mind would not function. In recognition of this fact, he had recently tried to hide his mental confusion by evading answers to important questions; when a subordinate approached him with a difficult problem he would roughly say that the business had to be postponed. His appetite was gone and he had formed the habit of taking two or three cocktails before dinner and another drink before going to bed. He would carry his business cares to bed with him and would lie awake for two or three hours. Then he would fall into a light sleep from which he would soon wake to find himself sitting on the edge of the bed, hands clenched, and finishing a harangue. He would get up and spend hours doing picture puzzles in the hope that he could sleep again. Before breakfast he would take a drink of whisky in order to steady himself for the day. He had vainly sought relief by taking large doses of barbital and acetylsalicylic acid. The only food that tasted good to him was tomatoes eaten from the can. It was only after eating tomatoes that he had diarrhea. Physical examination of this patient showed no abnormalities suggesting organic disease. The results of a careful laboratory study were negative. From the physician's knowledge gained by actual contact with the life of such a patient will spring the power and the ability to act wisely.

Three quarters of a century ago, Dr. John Brown quoted with approval a paragraph from "Emma," "Depend upon it," wrote Miss Austen, "a lucky guess is not mere luck; there is always some talent in it." I have previously quoted Dr. Brown, and I shall quote him further here. "Without some knowledge of his art," writes he, "a physician may have zeal, knowledge, ingenuity, attention, a good eye, and a steady hand—he may be an accomplished anatomist, stethoscopist, histologist, and analyst; yet, with all this, and with all the lectures, and all the books, and all the sayings, and all the preparations, drawings, tables, and other helps of his teachers, crowded into his memory or his notebooks, he may be beaten . . . by the nurse in the wards where he was clerk, or by the old country doctor who brought him into the world, and who listens with such humble wonder to his young friend's account . . . of all the last astonishing discoveries and operations of the day. . . . What the doctor needs to crown and give worth and safety to his accomplishments is sense and genius." We must "not only have wisdom which is knowledge assimilated and made our own, but must have wit to use it."

I remember an episode which occurred on my first night of hospital internship. A patient was brought in whose condition I could not diagnose at once, but an old nursing sister who stood at my elbow whispered to me "He looks and smells like typhoid." Her intuition proved correct.

### ATTITUDE OF PATIENTS TOWARD DOCTORS

If the care of the patient is to be successful, he must have confidence in the physician. It is fortunate if there is on both sides a feeling of friendship, even of affection. But confidence in the physician and affection for him is not an inherent characteristic in our patients, a fact we learn to our chagrin. During the early years of my practice, I was asked to prescribe for a child. On entering the room, I was greeted with screams. "Be quiet, darling," said the mother, "nobody likes the doctor." On another occasion, a patient said to me, "Doctor, when I went to your office and was told that you were ill, I could have killed you."

### BUILDING UP CONFIDENCE

Yet confidence in the physician will be misplaced unless it is founded on an appreciation of his honesty of purpose, of his adequate knowledge of the science and of the art of medicine. The possession of these qualifications is readily apprehended. Confidence may be shaken by a tendency on the part of the physician to show impatience, to appear abstracted during the hearing of an oft-told tale or to exhibit untimely levity; by his obvious vacillation of purpose, by gossip about his other patients or by unkind criticism of other physicians. It may be lost as a result of his failure to warn the patient before the infliction of pain, or to prescribe a placebo to the man who has great faith in the value of drugs; by his refusal, or even by his manifest reluctance, to call another physician in consultation. Confidence is not necessarily lost because of an inability to provide a diagnosis. Throughout the prolonged and fatal illness of the wife of an unusually intelligent and forceful man, a definite diagnosis could not be made. It was possible only to formulate an hypothesis. This was frankly discussed with the patient's husband. In the face of great opposition, the latter remained loyal to the physician. A postmortem examination confirmed the tentative diagnosis.

To the patient and to his friends, the personality, the possessions and the habits of his physician may be a source of great interest. A professional visit may be the most important incident of the day. Subsequent to his call there may be such comment as this: "The doctor came to my house in a cheap car. I don't like to think that I may be the only man who believes in him." "I will not have Dr. Blank in my house again: did you notice his cuffs?" "That doctor's blood pressure apparatus does not work: he had to pump it up four times." The patient notes also the duration and the frequency of the professional visits. I know a chronic invalid who times his doctor's visits by means

of a stop watch hidden under the pillow. If the visit is short, he says: "The doctor is not interested in me any more."

### EFFECT OF DISTRUST AND FEAR

In the hospital, if the physician passes the door of the patient's room, that fact may be regarded as evidence of neglect. Let him not be overconfident because the door may happen to be closed: the sick man knows his master's voice, the sound of his step. On the other hand, the number of professional house visits may be a subject of criticism. The calls are too few and therefore the physician is guilty of neglect; they are too frequent—the patient is being exploited. The latter criticism, almost always unjust, is frequent. Explanation as to the necessity of the visits would have avoided the introduction of an unfavorable emotion.

I have spoken of the unfortunate reaction that may arise as a result of distrust. Still more harmful is the emotion of fear, and all sick people are afraid: they dread pain, confinement, disability; they are apprehensive as to the effect of their illness on others; they foresee that their ambitions may be thwarted; they fear invalidism. They fear death.

These fears may or may not be groundless. In any case, they are harmful in themselves and the physician must try to lessen or dissipate them. Unfortunately, he may not be so equipped as to be able to give the patient helpful suggestions. He may, on the other hand, give harmful ones; he may say or do things that establish new fears and strengthen old.

### WHAT TO TELL THE PATIENT

The clinician often fails to realize the degree of influence which prognosis may exert. This influence affects the patient favorably or unfavorably in exact proportion to what he believes that the physician thinks. A chance word may appear to have a profound significance which is then transformed into terms of emotional and functional readjustment.

To avoid doing harm, the physician must be always on his guard, nor should he be deceived by the cunningly concealed traps set for him. The patient who says, "You may tell me everything, because I am not afraid," trembles as he awaits the dreaded sentence. Often one must adroitly evade the giving of answers to questions even if they appear casual. One's air of optimism may be overdone. "Doctor, last year when I noticed just a little shortness of breath, you told me that I need not worry. Now that I have so much pain in my heart that I can't get out of bed, you tell me the same thing. Why should I believe what you tell me now?"

I will mention but one example of the damage that can be done by unfavorable prognosis. An old professor with grade C heart failure had two occupations in which he took delight: one was the teaching of Latin; the other, the building of a stone wall. He was told that he should give up teaching permanently, and that the wall must be built by others. He took the sentence with apparent courage, left the office of the physician after recommending his favorite translation of the Georgics, and went home. Next day, his wife heard a shot. She rushed to her husband's room and found him on the floor. He was dead.

In arriving at a prognosis, the clinician must be guided, of course, by the past experience of himself and others. He will remember patients who have recovered, although for a time the outcome appeared hopeless. A physician whose eyesight was rapidly failing as a result of choroiditis was referred to a celebrated ophthalmologist. On leaving the latter's office, the patient was told that he could hope to retain only peripheral vision. Subsequent to tonsillectomy, the choroidal exudate was absorbed. One could multiply examples.

The physician must also bear in mind the fact that errors in diagnosis are frequent. In 1917, I saw in London a relative who had recently submitted to an abdominal operation and had been told that the operation had been performed for the removal of cancer, but without success. I questioned her surgeon, who informed me that he had closed the wound without removing any tissue except the fragment for microscopic examination. The latter confirmed the diagnosis of carcinoma. The patient is alive and well today. Who can blame her for abandoning physicians and seeking aid from Christian science?

But if the facts are known and it is certain that the outcome of the case must be disappointing or even disastrous, the problem as to how much the patient may be told must be solved in the light of the physician's knowledge of that patient's personality. In any case, "the physician should commit himself only when he must." There may come a time, however, when a definnite answer must follow a definite question. The morale of a courageous patient may be improved by explaining his physical handicap and urging him, as Sir William Osler often did, to make friends with his complaints. Circumstances may arise in which a patient should be told the whole truth, but these are relatively rare. I believe that there are instances in which the physician must settle with his conscience whether the truth may not be selfish, disloyal. A battle may be lost because an enemy knows too much. The strictest moralist is not offended by the use of camouflage in war. It is necessary to examine this matter, because the telling of a lie demands justification. If one has told a lie in order to avoid disagreeable consequences to oneself, he realizes subsequently that he has lost in dignity, that he has joined for the moment that "hell broude which ys at the Rhodes." On the other hand, the falsehood that is told for the good of others may not only be justifiable: it may be invaluable.

Quite independently of an unfavorable prognosis, the physician may injure his patients by exciting fear. Fortunate is the physician who has a cheerful countenance or at least what has been called "a poker face." I know an excellent surgeon whose tragic mask is partly inherited, partly acquired as a result of his own bodily ills. Some of his patients refer to him as Dr. Gloom. He scattereth not the lotus.

If patients suspect disease of the circulatory organs, they are peculiarly fearful. Many people will consult a physician because they have been told that they have a systolic murmur or high blood pressure. It is, of course, impossible to make a diagnosis of valvular disease on the basis of the presence of systolic murmur alone. Many people believe that they have high blood pressure if they have been told that the readings are in excess of the number of years of their age plus 100. A patient can occasionally be reassured by telling him that this formula is incorrect and that the presence of anxiety often heightens initial blood pressure readings. Blood pressure may fall 40 or 50 mm. after the patient has been assured as to the absence of demonstrable cardiovascular disease.

Before estimating blood pressure, it is advisable to request the patient not to ask for the results. Usually,

he will acquiesce if the reasons for the request are explained to him. Under such conditions, dictation of numerals should be expressed in terms of a code. Cooperation from the patient cannot always be secured. "You might as well tell me what my blood pressure is, because my husband and I have an apparatus at home and we take each other's blood pressure every other day." It is obvious that fear may be reawakened if frequent reexaminations are made. "Why do you take my blood pressure every time that I come to your office when you have told me that it is all right?"

During the war, in the care of patients with "soldier's heart," it was found advisable to drop the word "heart," even the first letter of the word, from the diagnosis.

I could give many examples proving the evil effect of fear. I recently saw a ward patient with a normal heart who had done no work for six months because a physician had told him that he had an irregular pulse. The arrhythmia was due to premature ventricular contractions, and when he was told that the latter were harmless, he returned to work. I have seen children who have been kept in bed for months because they had a sinus arrhythmia. Once established, the emotion of fear is tenacious and often produces pathetic results. A medical friend of mine leaves his practice in a distant city at rather frequent intervals in order to be reassured that a sensation as of his "heart turning over" is not due to a condition that will make it stop beating for all time. This man can laugh at himself, but only after he has been once more reassured. "That is what I tell my patients," he says, "but I cannot believe it true when applied to me."

### RESULTS OF SUGGESTION

Operations on neurotic people should be advised only after most careful consideration of all the evidence. To avoid harm, the clinician must realize several facts: that unpleasant symptoms of nervous origin are often referred by the sufferer to concealed organs; that the results of the operative drive are often disastrous; that the removal of supposed infective foci is useless if the harm has already been done; that the fact that a patient is a poor operative risk may be shown only as a result of careful study of the individual; and that, in spite of such study, the after-results may show the final judgment to have been wrong. As an example of the harmful effects of medical and surgical treatment, I quote the following case: An old historian had been told that he had high blood pressure caused by focal infection. He submitted in turn to tonsillectomy, extraction of all his teeth, appendectomy and cholecystectomy, and prostatectomy. When I saw him, his morale was lost, and this partly because his last physician had advised him to stop work on a book which was to be the culmination of years of preparation. I advised him to get to work. He was radiant when I left him. I believe that my advice was sound.

Hurtful suggestion may also be implanted through giving the patient too much information. A man was told by a physician's assistant that his white cell count was 50,000. He read up on leukemia, and the three years before his death were filled with anguish because he knew that he had a fatal disease. Another patient was told that his spinal fluid contained a few lymphocytes. His twenty year old encyclopedia gave him the information that the presence of lymphocytes was an indication of approaching paresis or locomotor ataxia. In an attempt to dislodge this belief, I spent many weary hours. For like reasons, a formal report as to the result of a medical survey should seldom be placed in a patient's hands.

Many people who are ill are harmed by being placed in hospitals, especially in such as are known to specialize in the treatment of mental diseases, or those with such names as Charity Hospital, Cancer Hospital, Home for Incurables, Home for the Friendless. Sometimes, overrestriction of a patient's activities may be more detrimental than the activities themselves. A little golf, an occasional trip to Europe, a moderate use of tobacco—all these may affect him favorably. Even allowing a patient to sit up in a chair may put him in a more hopeful state of mind.

I close this portion of my discussion with a warning as to the danger that may lurk in the use of psychoanalysis. As a medical friend of mine has said, psychoanalysis, like insulin, may result in shock. Therefore the patient as well as the physician must understand its indications and the dangers attending its use. Psychoanalysis, when resorted to, is often best employed by the family physician.

### DISAPPOINTMENTS AND REWARDS

An editorial writer has cynically said that the physician amuses the patient while nature cures him. The mind of the patient must be diverted from his symptoms, but the physician must do more than amuse. He must supplant harmful emotions by those that are helpful. Through his prognosis and his own apparent cheerfulness, moreover, he must give the patient confidence. He must set an example of high-mindedness and courage. He must be able to accept criticism with equanimity. It has been well said that that physician is merely a slave whose feelings can be hurt by a patient or by that patient's friends. Only too often are the friends inimical; only too often do they prove the truth of the witty lines:

> A crocodile's smile is a threat in disguise,
> Like welcome inscribed on the mat.

The physician must realize that the patient desires and requires personal attention; that he desires active treatment and is disappointed when he receives only diagnosis. Small wonder, therefore, that the cultists flourish. Although based on wrong theories, mental suggestion or physical manipulation, even when practiced by the quack, may be really beneficial. The physician should study these methods and should apply them in the care of certain patients. He will do this with less revolt when he remembers that mental suggestion, manipulation and hydrotherapy have been accepted forms of medical treatment since the days of the early Greek physicians. There is, obviously, nothing new under the sun. The ultimate survival of the private practitioner will depend largely on a realization by the profession of the patient's demand for personal service and that the art of medicine is in its very essence completely personal.

To the practitioner of this art come many rewards, among them sometimes the beauty of a loyalty which persists even through a losing fight. Our patients are often finer than we know and capable of infinite gallantry, even in the act of dying. The last words of one were "I must get well or I will disappoint my doctor." She was holding the physician's hand as she died. Another refused the services of a healer throughout her fatal illness only because she was afraid that she would hurt her doctor's feelings.

But the most tragic hours of a physician's life are, of course, spent by the bedsides of those whom he loves and whose dear familiar faces will soon be gone. It is he, and he alone, who can bring consolation to them now. He must set the example of fortitude. His ministrations will give the last degree of comfort that they will know.

These hearts were woven of human joys and cares,
Washed marvellously with sorrow, swift to mirth.
The years had given them kindness. Dawn was theirs,
And sunset, and the colours of the earth.
These had seen movement, and heard music; known
Slumber and waking; loved; gone proudly friended;
Felt the quick stir of wonder; sat alone;
Touched flowers and furs and cheeks. All this is ended.

Then the physician must return to his labors. It will be very hard, but he did not take up the practice of medicine because he thought it easy. Through his sorrow, he will have achieved a new degree of helpfulness. He carries on.

Fellow students, to us has been entrusted that great treasure accumulated through the centuries by the masters of our art. To some of us have been entrusted five talents, to others two. If some have received only one, that fact does not matter. What we have been given, that we must put to its utmost use. The masters return to us when we think of them. May we merit their commendation!

So, by following the way which has been marked for us, our spiritual lives become enriched; by contact with the lives of suffering people we keep alive that something of the poet in us which is apt to die so soon. We learn to "rejoice in the presence of truth as a visible friend and hourly companion."

The lives of all who enter the practice of medicine will be full of toil and anxiety. We can have no engagements which may not be broken. Our lives can never be wholly our own, but even the busiest of us can escape now and then into secret places. There we can enjoy friends, the sweet fellowship of books, the delight of music, the companionship which a garden gives. With Fra Giovanni we can learn that "no peace lies in the future which is not hidden in the present little instant." We take peace. We know that "the gloom of the world is but a shadow. Behind it, yet within our reach, is joy. There is radiance and joy in the darkness, could we but see; and to see, we have only to look." We look. Courage and self-reliance become ours, for we discover that in caring for his patient the physician may become as "a hiding place from the wind and a covert from the tempest: as rivers of water in a dry place: as the shadow of a great rock in a weary land."

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**Mental Traits of Men of Science.**—Men like Pasteur, Newton, Willard Gibbs are so brilliant, so in tune with nature's mysteries, that they leap to conclusions across gaps that we cannot follow, but Darwin, as great a benefactor to the world, as true a scientist as history tells us of, does not seem to sense nature's mysteries, and then gather confirmatory information, but by the very rigor of his research he compels her to reveal them. Darwin walks in no seven-league boots. Each step is foreshadowed by the one before. Upon closer examination we may find that this distinction between a Pasteur and a Darwin is not a real one, but in the process of comparison the life of Darwin provides a better key to that of Pasteur than does that of Pasteur to Darwin.—Kelley, T. L.: Scientific Method, Ohio State University Press, 1929, p. 147.

# THROMBO-ANGIITIS OBLITERANS (BUERGER)

## V. RESULTS OF TREATMENT WITH REPEATED INJECTIONS OF HYPERTONIC SALT SOLUTION *

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It is now almost seven years since the treatment of thrombo-angiitis obliterans with intravenous injections of hypertonic sodium chloride solution was begun. Three years ago a preliminary report was published on the results obtained in eighty-four cases with this method of treatment.[1] Since then 205 new cases have been treated, and of the total number many have remained under continuous observation for a period of from two to six years. The additional experience thus gained makes possible a more accurate estimate of the advantages and limitations of this therapeutic measure. As no modification has been made in the method of treatment that was described in 1926 [1] and again last year,[2] it is unnecessary to repeat the details of the technical procedure.

### MATERIAL

Of the total number of 289 patients [3] forming the basis of this study, 225 are regarded as having typical thrombo-angiitis obliterans. These are patients with organic obstruction of the circulation in the extremities whose initial symptoms of impaired circulation began before the age of 45 and in whom other causes of arterial obstruction, such as syphilitic endarteritis, embolism from cardiac disease and trauma, have been excluded. The remaining sixty-four are classed as borderline forms of this disease. In the latter, symptoms of circulatory impairment began between the ages of 45 and 55 and the condition cannot be differentiated with certainty from atherosclerosis. Patients whose symptoms began after the age of 55, and particularly those in whom roentgen examination of blood vessels showed calcification, are not examples of thrombo-angiitis obliterans and therefore were excluded from this study.

TABLE 1.—*Periods of Observation of 289 Treated Cases*

| | Typical Thrombo-Angiitis Obliterans | Borderline Thrombo-Angiitis Obliterans |
|---|---|---|
| Less than 1 year | 60 | 19 |
| 1 to 2 years | 49 | 19 |
| 2 to 3 years | 49 | 15 |
| 3 to 4 years | 36 | 10 |
| 4 to 5 years | 16 | 1 |
| 5 to 6 years | 10 | .. |
| 6 to 7 years | 5 | .. |
| Totals | 225 | 64 |
| Dead | 10 | 4 |
| Living | 215 | 60 |
| Seen in 1929 | 191 | 51 |

Every case that was under observation and treated for more than a month is included in the list of cases. In view of the fact that temporary remissions occur in thrombo-angiitis obliterans, patients must be observed for a period of years before claims can be made for any

* From the Outpatient Department of the Mount Sinai Hospital.

1. Silbert, Samuel: Treatment of Thrombo-Angiitis Obliterans by Intravenous Injection of Hypertonic Salt Solution, J. A. M. A. **86**: 1759-1761 (June 5) 1926.
2. Silbert, Samuel: Treatment of Thrombo-Angiitis Obliterans, supplement to the George Blumer Edition of Billings-Forchheimer's Therapeusis of Internal Diseases, New York, D. Appleton & Co., 1929.
3. Treatment has been continued in eight cases after amputation was done and these patients are relisted after amputation as new patients.

method of treatment. For this reason an effort has been made to keep in touch with every patient who has been treated. Table 1 shows the length of time these patients have been observed. Fourteen of the 289 patients are dead. Of the 275 living patients, 242, or 88 per cent, have been reexamined during 1929.

### EFFECT OF TOBACCO ON CLINICAL COURSE

This relatively wide experience with the treatment of thrombo-angiitis obliterans has convinced me that smoking is the most important contributing factor in producing the disease, and that cessation of smoking is an essential therapeutic measure. All of the patients have been instructed to stop smoking and repeatedly warned of its ill effects. Most of the failures to obtain improvement can, in my opinion, be directly traced to the patient's refusal to follow this advice. In spite of the fact that the patients who failed to cooperate reduced the number of good results, they are included as part of the data presented. It is significant that 50 per cent of the patients who required amputation continued to smoke in spite of repeated warnings. Recurrence of symptoms, after the individual had been restored to good condition, was almost invariably traceable to the resumption of smoking. In only two instances, in my experience, has a progression of the disease taken place when the patient was not using

TABLE 2.—*First Amputations in Typical Thrombo-Angiitis Obliterans (Untreated)*

| | | |
|---|---|---|
| Total number of cases studied | | 460 |
| Amputated within 5 years | 158 | |
| Amputated after 5 years | 34 | |
| Total amputated cases | | 192 |
| Unamputated, duration of illness over 5 years | 55 | |
| Unamputated, duration of illness under 5 years | 213 | |
| Total unamputated cases | | 268 |

tobacco: in one case an excessive dose of typhoid vaccine given intravenously was followed by immediate closure of a previously open popliteal artery (case 15, table 5), and in the second instance prolonged exposure to severe cold was followed by a similar occurrence. At the present time the conclusion seems warranted that thrombo-angiitis obliterans seldom progresses as long as the patient refrains from smoking.

### INCIDENCE OF AMPUTATIONS IN UNTREATED AND TREATED CASES

A survey of a large number of histories of untreated cases, that is, cases not treated by any special method, showed that the vast majority of patients with thrombo-angiitis obliterans were subjected to amputation sooner or later. Thus it may be said that the only proof of the usefulness of any method of treatment is its capacity to avert the need for amputation of an extremity. As a basis for comparison with the number of amputations required in treated cases, a study of 258 untreated cases was made and reported three years ago.[4] It was stated then that 77 per cent of the patients studied had had at least one amputation during the period of five years from the time of onset of the disease. The majority of these untreated patients had been seen in the wards of the hospital and therefore represented the more severe forms of the disease. Since the clinic for the treatment of ambulant patients has been established in the outpatient department of Mount Sinai Hospital, a large number of the patients with milder types of the disease have been attracted there for treatment. In this way a total of 460 untreated cases which fall into the category of typical thrombo-angiitis obliterans have now been collected and studied for frequency of amputations, and the data are presented in tables 2 and 3. It will be seen that instead of 77 per cent of cases, as previously reported, in which amputation was done in the first five years of the disease, the figure is reduced to 64 per cent. Because of the greater variety and the larger number of cases, this figure represents the more accurate percentage of patients who required amputation within five years from the onset of their symptoms.

TABLE 3.—*Percentage of Patients with Amputations Within the First Five Years (Typical Thrombo-Angiitis Obliterans, Untreated)*

| | |
|---|---|
| Total cases without amputation, duration of illness over 5 years | 55 |
| Total cases with amputation, after 5 years | 34 |
| Total cases with amputation, within 5 years | 158 |
| Total cases followed for sufficient time | 247 |
| Proportion with amputation within 5 years | .64 per cent |

A study of the data presented in table 4 reveals that, of the 225 treated patients in the group with typical thrombo-angiitis obliterans, twenty-one, or only 9.3 per cent, have required amputation up to the present time. One hundred and seventy-five patients were seen before any amputation had been performed, and fourteen of this number, or 8 per cent, came to amputation. All amputations occurred within the first two years of observation. Of the 194 living patients, 116 have remained free from distressing symptoms for a period of from two to six years. Sixty-five patients (29 per cent) have been restored to such good physical condition that no further treatment is necessary. They are still under periodic observation and show no tendency to relapse. In only three patients who were considered recovered have relapses with the formation of ulcers occurred and in each instance the patient admitted that he had resumed smoking. However, no relapse has been severe enough to necessitate amputation.

TABLE 4.—*Results of Treatment in 289 Cases of Thrombo-Angiitis Obliterans*

| Thrombo-Angiitis Obliterans | Number of Cases | Improved | Working | Unimproved | Amputation | Dead |
|---|---|---|---|---|---|---|
| **Typical (225 cases)** | | | | | | |
| No amputation | 175 | 149 | 123 | 25 | 14 | 9 |
| One amputation | 45 | 36 | 26 | 9 | 7 | 1 |
| Two amputations | 5 | 5 | 4 | 0 | 0 | 0 |
| | 225 | 190 | 153 | 34 | 21 | 10 |
| **Borderline (64 cases)** | | | | | | |
| No amputation | 56 | 49 | 38 | 7 | 2 | 2 |
| One amputation | 8 | 6 | 2 | 2 | 1 | 2 |
| | 64 | 55 | 40 | 9 | 3 | 4 |
| Totals | 289 | 245 | 193 | 43 | 24 | 14 |

It is noteworthy that in 71 per cent of the instances in which amputation was done it was necessary a few months after the beginning of treatment (table 5). Thus it is apparent that the majority of patients who required amputation were already in so advanced a stage of the disease that there was little chance to check it. Study of these data shows that if the patient can be saved from amputation during the first year of treatment the chances are that such a procedure will never become necessary. The lowest percentage of amputations (less than 4) was obtained in the group

4. Silbert, Samuel: Studies in Thrombo-Angiitis Obliterans (Buerger): II. Effectiveness of Therapeutic Procedures, J. A. M. A. **89**: 964-966 (Sept. 17) 1927.

in which the diagnosis was made early in the disease and in which the patients gave their fullest cooperation.

Of the twenty-one patients who were subjected to amputation, only eleven remained under my control. In several of these it was obvious that amputation was inevitable but treatment was given in order to make

TABLE 5.—*Amputations*

| Name | Duration of Treatment Before Amputation | Site of Amputation | Patient Continued Smoking | Comment |
|---|---|---|---|---|
| 1. M. G. | 6 mo. | Above knee | Yes | |
| 2. S. L. | 4 mo. | Below knee | Yes | |
| 3. M. R. | 4 mo. | Below knee | Yes | |
| 4. J. M. | 4 mo. | Below knee | Yes | |
| 5. W. K. W. | 2 mo. | Below knee | No | |
| 6. S. S. | 3 mo. | Above knee | Yes | Amputation elsewhere |
| 7. W. K. | 2 mo. | Below knee | No | |
| 8. B. N. | 2 mo. | Above knee | Yes | Amputation against my advice |
| 9. L. C. | 11 mo. | Below knee | No | |
| 10. M. B. | 2½ mo. | Above knee | Yes | Amputation elsewhere |
| 11. S. A. | 4 mo. | Below knee | No | |
| 12. M. K. | 4 mo. | Below knee | No | |
| 13. A. H. | 24 mo. | Above knee | No | Amputation against my advice |
| 14. A. L. | 12 mo. | Above knee | Yes | Amputation elsewhere |
| 15. M. H. | 24 mo. | Above knee | No | Amputation above knee against my advice |
| 16. J. N. | 24 mo. | Above knee | Yes | Discontinued treatment; amputation elsewhere |
| 17. D. F. | 1 mo. | Above knee | No | Amputation elsewhere |
| 18. E. M. | 2 mo. | Below knee | No | |
| 19. A. S. | 2 mo. | Above knee | Yes | Amputation elsewhere |
| 20. W. S. | 4 mo. | Above knee | Yes | Amputation elsewhere |
| 21. B. F. | 2½ mo. | Above knee | No | |

possible a lower amputation. In nine of these eleven cases, amputation was done below the knee with good results. In the remaining ten cases in which treatment by this method was discontinued, all the amputations were above the knee.

Of the 225 patients in the first group, forty-five had already had one amputation when first seen and were treated for symptoms in another extremity. In an effort to arrive at an evaluation of the efficacy of the treatment in these cases, a study was made of the frequency of second amputations in cases observed without treatment. A perusal of the case histories of 113 patients with single amputations and of seventy-nine patients with double amputations reveals that 46 per cent of these patients with untreated thrombo-angiitis obliterans lost a second extremity within ten years of their first symptom (table 6). Of the forty-five treated patients who had already lost one extremity when first seen, only seven, or 16 per cent, have required second amputation. Fourteen, or 31 per cent of the remaining patients, have now passed the ten-year period without loss of a second extremity.

TABLE 6.—*Incidence of Second Amputations in Typical Thrombo-Angiitis Obliterans (Untreated)*

| | |
|---|---|
| Total cases without amputation, duration of illness over 10 years | 23 |
| Total cases with single amputation, duration over 10 years | 23 |
| Total cases with second amputation done after 10 years | 20 |
| Total cases with second amputation done within 10 years | 59 |
| Total number of cases followed for a sufficient period | 128 |
| Percentage of second amputations within 10 years | 46.1 |

## HEALING OF ULCERS

The development of ulcers on affected extremities is frequent in thrombo-angiitis obliterans, and because of the impaired nutrition such ulcers are difficult and sometimes impossible to heal. One hundred and thirty-five of the total group of 289 patients presented ulceration of an extremity at the time of the first examination (table 7). These ulcers varied in diameter from a few millimeters to several centimeters. In the course of treatment, eighty-six of these ulcers have healed. Of the remaining patients, twenty-three have come to amputation or have died and twenty-six ulcers are still unhealed. Seven of these patients discontinued treatment and seven have not yet received treatment long enough to expect marked improvement. The remaining twelve are still unhealed in spite of prolonged treatment. A few of the latter group could not be prevailed on to stop smoking. Better results might perhaps have been obtained in some of the patients if it had been possible to keep them in bed while the treatment was given. Unfortunately, hospital accommodations for prolonged periods are not available for such patients.

TABLE 7.—*Healing of Ulcers*

| Thrombo-Angiitis Obliterans | Patients with Ulcers | Healed | Unhealed | Dead or Amputated |
|---|---|---|---|---|
| Typical | 120 | 74 | 26 | 20 |
| Borderline | 15 | 12 | 0 | 3 |
| Totals | 135 | 86 | 26 | 23 |

## OTHER EVIDENCE OF IMPROVEMENT IN TREATED CASES

Another rough indication of the success of treatment is the ability of the patient to return to work. One hundred and ninety-three, or 67 per cent of all the patients treated, have either continued or returned to work. In fifty-one patients (17 per cent), arterial pulsation returned in an extremity in which repeated examination had previously revealed no pulsation. Oscillometer readings improved in 108 (37 per cent) of the patients. Relief of pain and improvement in the ability to walk were noted in 245 (84 per cent) of the patients (table 8).

## DANGERS AND CONTRAINDICATIONS

Experience with this method of treatment in a large clinical material has revealed that it is perfectly safe. More than 19,000 injections have now been given either by myself or under my supervision, and no fatalities or serious reactions have been observed. In a few instances, temporary jaundice occurred which cleared up rapidly when treatment had been discontinued for a few weeks.[5] In the majority of cases, treatment has been continued for from one to two years without evident harm to any part of the body.

Nevertheless, great care should be exercised in selecting patients for treatment with injections of hypertonic salt solution. It is contraindicated in patients over 60 years of age and in those who show signs of an injured myocardium or poor renal function. It is also contraindicated in instances in which obstruction of the circulation is due to embolism from cardiac disease or other sources. There is no good reason for attempting this form of treatment in cases of Raynaud's

TABLE 8.—*Improvement in Circulation*

| Thrombo-Angiitis Obliterans | Total Cases | Symptomatic Improvement | Oscillometric Improvement | Pulses Returned |
|---|---|---|---|---|
| Typical | 225 | 190 | 83 | 41 |
| Borderline | 64 | 55 | 25 | 10 |
| Totals | 289 | 245 | 108 | 51 |

disease or other vasomotor neuroses, conditions in which no definite organic obstruction of the circulation is present.

5. The reason for this jaundice is being investigated, as it may be due to an extraneous cause.

SUMMARY

Of 460 patients with untreated thrombo-angiitis obliterans who were studied and analyzed with reference to frequency of amputation, 64 per cent had an amputation of one extremity during the first five years of illness and 46 per cent an amputation of a second extremity during the first ten years.

The results obtained in 225 cases of typical thrombo-angiitis obliterans and sixty-four borderline cases of this condition treated with intravenous injections of hypertonic salt solution indicate that this method of treatment is effective and safe.

Eighty-eight per cent of all the patients treated have been reexamined during the past year. Eighty-four per cent have shown symptomatic improvement and 67 per cent have been able to return to work. Sixty-four per cent of all ulcers have been healed. Only 8.3 per cent of all patients treated required amputation.

CONCLUSIONS

1. Repeated injection of hypertonic salt solution is an effective method of treatment in thrombo-angiitis obliterans.

2. Satisfactory results are obtained only if patients stop using tobacco.

55 East Eighty-Sixth Street.

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# NEUROLOGIC CHANGES FOLLOWING CARBON MONOXIDE POISONING

## REPORT OF CASE

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The importance of carbon monoxide poisoning would seem sufficient to warrant the presentation of a typical case exhibiting the usual late results, and a discussion of the chief features of this exceedingly common condition.

According to McNally,[1] in the years from 1919 to 1926 inclusive there were sixty-three deaths in Cook County due to exposure to automobile exhausts. It is stated by the same authority that the automobile exhaust contains from 1.16 to 6.62 per cent of carbon monoxide. Yant, Jacobs and Berger, as quoted by McNally, estimate that a five passenger car idling at 200 revolutions per minute for sixty minutes in a garage containing 2,950 cubic feet of air will produce a carbon monoxide concentration of 2.1 per cent. A concentration of 0.15 per cent is stated by Haggard and Henderson[2] to be highly dangerous even for brief exposures. The daily press is constantly publishing accounts of accidental and suicidal deaths due to illuminating gas, which is extremely dangerous in America, where it contains a high percentage of carbon monoxide, because of its "water gas" content.

No records are available as to the number of persons who, having escaped death, suffer from the end-results of carbon monoxide poisoning. Suffice it to say that the number must be considerable, and hence it is fitting that advantage be taken of an opportunity to review briefly the knowledge of the condition, and to formulate ideas as to the proper treatment of these patients.

1. McNally, W. D.: Sixty-Three Deaths from Carbon Monoxide Poisoning in Private Garages, Arch. Path. 5: 43 (Jan.) 1928.
2. Haggard, H. W., and Henderson, Yandell: The Treatment of Carbon Monoxide Poisoning, J. A. M. A. 77: 1065 (Oct. 1) 1921.

## REPORT OF CASE

R. N., a man, aged 29, single, a locomotive fireman, had an irrelevant family history, and his past history contained nothing unusual except for occasional attacks of sore throat. Specifically there was no history suggestive of encephalitis previous to the present illness, and only a vague history of some form of respiratory infection before the Great War. The patient was admitted to the Illinois Central Hospital in July, 1926, for a tonsillectomy. At that time the general medical examination did not reveal any abnormalities, and the urinalysis and blood Wassermann reaction were negative. He continued work after this operation, and was in perfect health until April 19, 1929.

At 2:50 p. m. on that date he was known to have driven his car into his garage, which accommodates only one automobile. At about 4 p. m. his landlady, not knowing that he was in the garage, locked the already closed doors without looking in or noticing anything unusual. That night the patient failed to appear at his home, and at 9 o'clock the next morning, eighteen hours after he had entered the garage, he was found by a searching party. He was lying unconscious on his right side in the front seat of his car. His face and hands were purplish. The hood of the car was open and the ignition turned on, but the motor was silent. Tools were lying on the running board, and the gasoline tank in the car was half full. The patient was rushed to the Illinois Central Hospital, where examination revealed occasional movements of the extremities. Respiration was regular and normal, the pulse was weak but regular and of normal rate, and the rectal temperature was 101 F. There was a moderately firm, nonfluctuant swelling just below the right ear the size of a small orange, and another firm swelling 4 cm. in diameter on the right buttock. In addition there were large bright red blotches covered with blebs about the mass below the right ear, and over a large area of the right thigh and buttock where the skin appeared eroded.

Urinalysis showed 3 plus albumin, and occasional hyaline casts and pus cells. The white blood cell count was 15,300 and the red blood cell count 5,670,000; the blood Wassermann and spinal fluid reactions were negative, except for the presence of ten cells, which was considered due to a slight amount of blood incident to the tapping. The roentgenograms of the right shoulder, the skull and the cervical spine were negative. Tests for carbon monoxide hemoglobin likewise were negative.

Five days later, April 25, a neurologic examination revealed that the patient was conscious but mentally confused and disoriented as to time and place. His speech was drawling, monotonous and slow. There were no ocular palsies; the pupils were small and equal and active to light and in accommodation. Motor power seemed to be normal throughout the body. The abdominal reflexes were present but feeble; the knee and ankle jerks also were present. There was no clonus, and a plantar flexion response was obtained to Babinski's test. There was a negative Kernig sign. The fundi were likewise found to be normal.

A tentative diagnosis of encephalitis due to carbon monoxide was made, and the patient was kept for further observation and treatment.

The course was one of slow but uninterrupted improvement until his discharge, June 20, when another neurologic examination showed that he was still somewhat sluggish mentally and presented a typical picture of parkinsonism, with immobile, expressionless face and husky, propulsive, monotonous speech. The motor power and all forms of sensation were normal, but all movements were reduced in speed and rapid finger movements showed the irregular interruptions and decreased amplitude so often seen in parkinsonism. All the deep reflexes were present and equal on the two sides except that the left achilles reflex was less active than the right, where six strokes of clonus were obtainable. The Babinski test was negative on both sides. There was a slightly increased resistance to passive movement of the limbs and a cogwheel phenomenon at times. There was a slight movement tremor in the finger to nose test. The handwriting was small (micrographia) and showed an irregular tremor. There was moderate edema of the legs, but no definite cause could be assigned at the time.

In July another examination showed the same conditions as before. At this time a urinalysis showed the presence of red cells and leukocytes, but there was no albumin present. The spinal fluid showed six cells, and all other tests, including a

colloidal gold curve, were negative. The patient was given a course of twelve injections of triple typhoid vaccine and discharged, possibly slightly better.

Shortly after this examination in July he began to have periodic attacks of rhythmic lateral tremor of the head, with similar pronation-supination tremor of both hands. These attacks came on about three or four times a day. Since then these tremors have continued but have become gradually somewhat less marked. A neurologic examination in December, 1929, revealed no further changes except that the gait had become slightly more spastic and the hypertonus somewhat more marked in the lower extremities. The skin of the fingers had begun to lose its usual markings, to appear stretched and tight, and to present in general the appearance of scleroderma. The edema of the ankles persisted and the face appeared also more puffy than at any previous examination. Another spinal puncture revealed a slightly blood-tinged fluid in which a count of seven cells was obtained. The electrocardiogram was within normal limits, presenting an inverted T wave in lead III. The blood urea was estimated at 12.6 mg. per hundred cubic centimeters and the creatinine at 1.5 mg.; a phenolsulphonphthalein test showed a return of 75 per cent of the dye in one-half hour.

## REVIEW OF THE LITERATURE

McConnell and Spiller [3] have divided carbon monoxide poisoning into acute, chronic and relapsing types. Patients suffering from acute poisoning exhibit nausea, vomiting, headache, vertigo, great weakness, drowsiness, coma, loss of sphincter control, convulsions and death or recovery. The skin is at first a bright cherry red, especially in the dependent parts, because of the color of the blood in the capillaries, but later the skin is ashen gray. When exposure to the gas first occurs the respirations are increased, but this polypnea diminishes the carbon dioxide of the blood and the respiratory rate falls. Among the sequelae of acute poisoning one observes pneumonia quite commonly, gangrene,[4] localized hyperemia, myocardial infarction,[5] multiple neuritis,[6] paralyses, parkinsonism,[7] choreiform movements, and mental deterioration. Chronic carbon monoxide poisoning, which, according to McNally, is very common in public garages, especially in the winter, manifests itself by headaches, vertigo, anemia, memory defect and mental dulness. The relapsing types of poisoning are seen in those who apparently recover from acute poisoning only to be stricken suddenly by hemiplegia, convulsions, asphasia, coma or death. These secondary events cannot be due to the gas itself, which is eliminated in the course of a few hours, but must result from some injury caused by the gas.

The patient whose history has just been given exhibited some of the sequelae that may follow acute poisoning. By far the most important changes occurring in patients who survive severe exposures to carbon monoxide are those involving the central nervous system. These lesions most frequently produce the clinical picture of parkinsonism, and my patient presented a syndrome remarkably like that following epidemic encephalitis. In addition to the generalized hypertonus, facial expression, gait and tremors, there was present, however, an emotional lability, silly laughter and definite mental decline. Manifestly, one is dealing here with a diffuse cerebral change, which, although probably exhibiting the bulk of its injury in the basal ganglions and especially in the globus pallidus, nevertheless involves other structures concerned in more complex behavior patterns.

When one searches the literature for information regarding the pathologic basis for these cases, one finds that the condition is much more complex and confusing than appears at first sight. Apparently there is a predilection for the globus pallidus, and the great majority of brains examined show bilaterally symmetrical softening in this portion of the lenticular nucleus. Stewart [8] and others have described thromboses in these softened areas and suggest this as a basis for the bilateral pallidal change. Mott [9] reported endothelial proliferation and fatty degeneration in the blood vessel walls. De Allende-Navarro [10] found degenerative and atrophic changes in the ependymal cells of the choroid plexus, and subependymal glial reaction and vascular changes in the so-called ecto-mesodermic protective barrier lining the third and fourth ventricles. In addition to vascular injury, however, one finds also in certain cases fatty degeneration of the pallidal nerve cells, and both swelling of some cells and pyknosis and shrinkage of others. Many [11] have described minute hemorrhages and diapedesis of blood cells both in the corpora striata and in the rest of the brain. Grinker [7] has described widespread demyelinization in addition to the bilateral pallidal necrosis. Softening in the cortex has been described by Wilson and Winkleman [12] and by Stewart,[8] who found this softening to be remarkably selective for the infragranular layer of the cortex, where also marked new vessel formation was seen. In experimental work on illuminating gas poisoning, Ferraro and Morrison [13] and others have noted that the whole olfactory system is affected, including Ammon's horn, the anterior and posterior olfactory lobes, the mammillary bodies, the habenular nucleus and the fascia dentata. Most of these workers also saw glial proliferation, gitter cell aggregations and collections of scavenger cells presumably microglial in origin.

Such a complex pathologic picture, and one with such widely different manifestations in different cases, is difficult to explain on the basis of a single toxic agent. As pointed out by Ferraro and Morrison, the question has long been debated whether all the changes result, first, from a primary carbon monoxide encephalitis, in which the gas exerts a toxic effect on living tissues; second, from functional vascular changes with engorgement, edema, ischemia and softening, or, third, from structural vascular changes with miliary and gross infarctions.

With regard to the theory that carbon monoxide has a direct toxic action on the nervous tissue, it may be stated that Haggard [14] and others have conclusively demonstrated that, at least under ordinary circum-

3. McConnell, J. W., and Spiller, W. G.: A Clinicopathologic Study of Carbon Monoxide Poisoning, J. A. M. A. **59**: 2122-2126 (Dec. 14) 1912.

4. Briggs, J. E.: Gangrene Following Carbon Monoxide Poisoning, J. A. M. A. **73**: 678-679 (Aug. 30) 1919.

5. Tesseraux, H.: Ueber ausgedehnte Myokardnekrosen bei einen Fall von Leuchtgasvergiftung, Centralbl. f. allg. Path. u. path. Anat. **42**: 344-347 (May 20) 1928.

6. Wilson, George; and Winkleman, N. W.: Multiple Neuritis Following Carbon Monoxide Poisoning, J. A. M. A. **82**: 1407-1410 (May 3) 1924.

7. Grinker, R. R.: Ein Fall von Leuchtgasvergiftung mit doppelseitiger Pallidumerweichung und schwerer Degeneration des tieferen Grosshirnmarklages, Ztschr. f. d. ges. Neurol. u. Psychiat. **98**: 433-456, 1925.

8. Stewart, R. M.: A Contribution to the Histopathology of Carbon Monoxide Poisoning, J. Neurol. & Psychopath. **1**: 105-116 (Aug.) 1920.

9. Mott, F. W.: Carbon Monoxide and Nickel Carbonyl Poisoning, Arch. Neurol. from the Path. Lab. of London County Asylums **3**: 246-289, 1907.

10. De Allende-Navarro, F.: Deux cas d'intoxication par gaz avec altérations de la barrière ecto-mésodermique du cerveau, Schweiz. Arch. f. Neurol. u. Psychiat. **14**: 199-209, 1924.

11. Hiller, F.: Ueber die krankhaften Veränderungen im Zentralnervensystem nach Kohlenoxy, Ztschr. f. d. ges. Neurol. u. Psychiat. **93**: 594-646, 1924. Weimann, W.: Hirnbefunde beim Tod in der Kohlenoxydatmosphäre, ibid. **105**: 213, 1926.

12. Wilson, George; and Winkelman, N. W.: An Unusual Cortical Change in Carbon Monoxide Poisoning, Arch. Neurol. & Psychiat. **13**: 191-196 (Feb.) 1925.

13. Ferraro, A., and Morrison, L. R.: Illuminating Gas Poisoning: An Experimental Study, Psychiatric Quarterly **2**: 506-541, 1928.

14. Haggard, H. W.: The Growth of the Neuroblast in the Presence of Carbon Monoxide, Am. J. Physiol. **60**: 244-249 (April) 1922.

stances, carbon monoxide has no such toxic action. Haggard has grown chick neuroblasts in an atmosphere of 79 per cent carbon monoxide and 21 per cent oxygen. J. B. S. Haldane[15] has shown that rats live quite comfortably under a pressure of three atmospheres of oxygen and one of carbon monoxide, although practically all the hemoglobin of such rats is combined with carbon monoxide, and although the body cells are subjected to very high concentrations of monoxide. In these rats oxygen is carried to the tissues in simple solution in the blood plasma. If the carbon monoxide is increased by another atmosphere, the rats die in convulsions; but this is a concentration never encountered in cases such as mine, and Haldane's work seems to demonstrate that under any except most extreme concentrations carbon monoxide is not per se a tissue poison. It is well known, on the other hand, that carbon monoxide forms a much more stable union with hemoglobin than does oxygen, and that in this way the oxygen-carrying property of hemoglobin is destroyed. The tissues are thus asphyxiated. It is also well known that insects, which have no hemoglobin but respire directly through their spiracles, suffer little inconvenience from the presence of carbon monoxide in the atmosphere.[15]

It is obvious, on the other hand, even to superficial clinical observation, that profound changes are effected in the vascular function by carbon monoxide. Local vascular engorgement in various parts of the body is commonly seen in illuminating gas or automobile exhaust poisoning. Also, it has been brilliantly demonstrated by Forbes, Cobb and Fremont-Smith[16] experimentally that one of the first results of carbon monoxide poisoning in animals is a dilatation of all the cerebral vessels with resulting congestion and cerebral edema. The work of these men suggests that the headache seen in milder cases results from increased intracranial pressure due to these vascular changes. They were able to relieve both the experimental edema in their animals and the headache in human beings by hypertonic saline solution intravenously.

Finally, structural vascular changes are almost constantly seen in the brains of persons who have died as long as a few days after gas poisoning.[17] Edema and swelling of the intima, fatty degeneration of the intima and media, and even calcification have been found at necropsy in such cases. The prevalence of the so-called relapsing cases of carbon monoxide poisoning in which one sees hemiplegias and evidences of other gross cerebral injury coming on after an apparently complete recovery from the gas must be due to such vascular changes. The multiple hemorrhages found in brains after poisoning probably result in part at least from vascular injury as well as from simple engorgement. Vascular thrombosis is also a frequent postmortem finding, although not universally seen.

There is thus but little evidence of a direct toxic action of carbon monoxide on the tissue cells but ample evidence of changes in vascular function and structure. The anoxemia resulting from the union of carbon monoxide with hemoglobin probably explains the vascular dilatation and engorgement, through the attempt of a physiologic mechanism to compensate for the oxygen starvation by a more ample blood supply to the vital cerebral centers. That such a mechanism exists has been shown by Anrep and Starling.[18] But this profound oxygen deficiency in the blood must also produce marked changes and even death in the complex neural cells, which are notoriously sensitive to oxygen starvation. Thus the cellular degenerations, pyknosis and swelling, the demyelinization and gitter cell aggregations may all be traced to oxygen deficiency.

One should also mention the fact that in all illuminating and automobile exhaust gases there are considerable quantities of benzene, which is a definite neurotoxic agent. Illuminating gas poisoning is thus by no means synonymous with carbon monoxide poisoning, though carbon monoxide is unquestionably the most important element present. Strict accuracy would require, therefore, that one speak of these as cases of illuminating gas or automobile exhaust poisoning.

Much effort has been made to explain why there is apparently a selective effect on the globus pallidus in carbon monoxide poisoning. The large majority of clinical cases reported show this selective action, presenting a bilaterally symmetrical softening in the medial portion of the globus pallidus. Other portions of the extrapyramidal system also frequently show what is apparently a selective injury. However, it should be remembered that essentially carbon monoxide poisoning produces changes in the whole central nervous system, not excluding the anterior horn cells of the spinal cord,[8] so that no part is immune. Some of the experimental work has failed to show selective injury to the globus pallidus.

Kolisko[19] suggested that the predominating harm undergone by the globus pallidus was due to the arrangement of the long, small arteries which are given off by the anterior and middle cerebral arteries supplying the general region of the basal ganglions. Thromboses and hemorrhages in these arteries are common. However, as Stewart has objected, other areas also supplied by the same arteries and not a part of the extrapyramidal system do not apparently share in what selective injury there may be.

Another theory would have it that carbon monoxide has a selective affinity for the globus pallidus. Since it is exceedingly doubtful that carbon monoxide acts as a poison at all in these cases, such a theory at least is difficult to credit.

I suggest that the apparent specific susceptibility of the extrapyramidal system may be due to the proportionately higher sensitivity of these parts to anoxemia. The cells of the nervous system admittedly are extremely susceptible to injury by oxygen deprivation, but no work, so far as I know, has been done on the problem as to how the various regions of the brain and spinal cord compare with one another in this respect. The answer to these questions awaits further work along this line.

A final word may be added as to the treatment of carbon monoxide poisoning. Some of the most severe cases reported have failed to show carbon monoxide hemoglobin in the blood even as soon as one or two hours after poisoning. Apparently the harm is done very quickly indeed, and haste in treatment is of the utmost importance. Artificial respiration is always the first and hence the most essential measure and for this purpose Schäfer's method is unquestionably the best. Yandell Henderson first proposed the use of 5 per cent carbon dioxide in 95 per cent oxygen. This mixture

15. Haldane, J. B. S.: Carbon Monoxide as a Tissue Poison, Biochem. J. **21**: 1068-1075, 1927.
16. Forbes, H. S.; Cobb, Stanley; and Fremont-Smith, Frank: Cerebral Edema and Headache Following Carbon Monoxide Asphyxia, Arch. Neurol. & Psychiat. **11**: 264-281 (March) 1924.
17. Mott (footnote 9). Hiller (footnote 11).
18. Anrep, G. V., and Starling, E. H.: Central and Reflex Regulation of Circulation, Proc. Roy. Soc. London, series B **97**: 463, 1924-1925.
19. Kolisko, A.: Die symmetrische Encephalomalacia in den Linsenkernen nach CO-vergiftung, Beitr. z. gerichtl. Med. **2**: 1, 1914.

should be given with a closed system, preferably with a mask or tent. The carbon dioxide is a most potent stimulant to respiration and thus assists in bringing about the early elimination of carbon monoxide from the blood.

For the late sequelae, no known treatment is of especial value. Those remedies now in use for the treatment of parkinsonism, ineffective though they may be, are all on which we have to rely.

### SUMMARY AND CONCLUSIONS

Following a case of acute carbon monoxide poisoning in a previously normal person, parkinsonism developed with increased tonus of the skeletal musculature, "cogwheel phenomenon," masked facies, monotonous speech, rhythmic tremor of the head and hands, mental decline and early scleroderma.

A study of the literature on the clinical and experimental aspects of the condition reveals that the nervous system is the seat of highly variable and complicated degenerative changes, and that these changes are the result of functional and organic vascular disturbances dependent on anoxemia. It is suggested that oxygen deprivation also produces parenchymatous neurologic alterations by direct action on the nervous tissue.

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# THE CLINICAL VALUE OF THE KAHN REACTION *

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Reports that have heretofore appeared on the Kahn test have dealt for the most part with comparisons with the Wassermann test. It seems obvious that the true value of any test may be best established by a comparison with the clinical observations. An opportunity was afforded in this clinic to check the results of the Kahn test against clinical observations, the latter test having recently become standard in the laboratories of the University Hospital.

This study is based on 2,070 blood Kahn examinations. The blood was obtained from patients falling into three groups: those presenting themselves to the clinic for advice regarding various dermatologic conditions; those in whom a diagnosis of syphilis was made or entertained, and those who had received antisyphilitic therapy either in this clinic or elsewhere. Some patients in the syphilitic group came originally to the Dermatology Clinic, and some were referred to the clinic because of either positive serologic tests or other evidence suggestive of syphilis. The types of syphilis considered were primary, secondary, tertiary (including gummas and cardiovascular syphilis), while special groups were made of latent cases, congenital cases, and syphilis of the cerebrospinal system.

The technic of the Kahn test [1] is briefly as follows: the test employs three reagents: antigen, previously standardized; serum from which all cellular matter has been centrifugated and which has been heated for thirty minutes at 58 C., and physiologic solution of sodium chloride. The antigen is mixed with the titrated amount of salt solution, and the resulting antigen suspension is pipetted into three test tubes in these amounts: tube 1, 0.05 cc.; tube 2, 0.025; tube 3, 0.0125 cc. To each of these tubes is added 0.15 cc. of the serum, making the proportions of serum to antigen suspension 3:1, 6:1, 12:1. The tubes are shaken in a mechanical shaker for three minutes. To tube 1 is then added 1 cc. of physiologic solution of sodium chloride, and, to tubes 2 and 3, 0.5 cc. to simplify reading. The tubes are shaken sufficiently to mix the ingredients, and the results are read. The reaction is four plus if all three tubes show definite particles. Less readily visible particles are read three plus, two plus, one plus or plus-minus, whereas absence of particles constitutes a negative reaction. These reports may be obtained from the laboratory in less than an hour when necessary.

### UNTREATED CASES OF SYPHILIS

The group of untreated patients includes 278, of whom 186 were referred from other clinics in the hospital and ninety came directly to the Department of Dermatology and Syphilology. As shown in table 1, eighteen patients with untreated primary syphilis were examined. Of these, eight gave four plus reactions, one a plus-minus, and nine negative reactions. In the secondary group 100 per cent, or fifty-one, showed four plus reactions. Of twenty-five cases in the tertiary group, seventeen showed four plus reactions, three two plus reactions, and five negative reactions. In the group of latent asymptomatic cases there were seventy-three, of which sixty showed a four plus reaction, two three plus, seven two plus, two plus-minus, and one a negative reaction. In the group of sixty-three patients with hereditary syphilis there were forty-nine giving four plus reactions, twelve three plus reactions, one one plus, one plus-minus, and one a negative reaction. Of the group of forty-seven cases of untreated cerebrospinal syphilis, thirty-five gave four plus, five three plus, two two plus, and five negative reactions. If the plus-minus reactions are regarded as positive, there is clinical and serologic agreement in all but twenty-one of the 276 cases considered. Negative tests occurred in nine cases of primary, five of tertiary, one of latent, one of hereditary, and five of cerebrospinal syphilis. The reactions in the cases of secondary syphilis were uniformly positive. The nine cases of primary syphilis in which negative serologic reactions were obtained were all early chancres, in many of which spirochetes were demonstrable by the dark field method and need no further comment, the presumption being that the serologic response had not had time to develop.

TABLE 1.—*Correlation of Kahn Reactions with Clinical Observations in 278 Blood Examinations in Untreated Cases of Syphilis*

| | ++++ | +++ | ++ | + | ± | − |
|---|---|---|---|---|---|---|
| Primary syphilis | 8 | .. | .. | .. | .. | 9 |
| Secondary syphilis | 51 | .. | .. | .. | .. | .. |
| Tertiary syphilis | 17 | .. | 3 | .. | .. | 5 |
| Latent syphilis | 66 | 2 | 8 | .. | 2 | 1 |
| Congenital syphilis | 47 | 12 | .. | 1 | 1 | 1 |
| Cerebrospinal syphilis | 35 | 6 | 1 | .. | .. | 5 |

The five cases of seronegative tertiary syphilis are presented here:

### REPORT OF CASES

CASE 1.—A. G., a woman, aged 45, was referred from the Department of Internal Medicine with a diagnosis of aortic insufficiency of the syphilitic type, with a possible aneurysm. No history of syphilis was obtainable, except that the patient had had one spontaneous abortion at the third month. She

* Studies and contributions of the Department of Dermatology and Syphilology of the University of Michigan Medical School, service of Dr. Udo J. Wile.

1. Kahn, R. L.: The Kahn Test, A Practical Guide, Baltimore, Williams and Wilkins Company, 1928.

complained of palpitations, pain in the left side of the chest extending down the left arm, and edema of the ankles. Examination revealed some lymphadenitis, and a diastolic murmur was heard all over the precordium, most marked in the aortic region. The systolic sound was roughened. There was increase in retromanubrial dulness. Roentgenograms revealed an aortic type of heart, and tortuosity of the aorta. The electrocardiogram showed a marked left ventricular preponderance. On the basis of these observations a diagnosis of syphilis of the aorta was made, and the patient was discharged on bismuth injections and potassium iodide.

CASE 2.—A. S., a man, aged 62, was admitted with a diagnosis of gumma of the sternum; no history of syphilitic infection was obtainable. Examination revealed a generalized lymphadenitis, including both epitrochlears. The left knee jerk was absent. A painless nodule in the manubrium sterni was diagnosed as gumma. Pathologic examination of this tissue showed "no positive evidence of syphilis, but an active pyogenic process bordering a large area of caseous necrosis; may be a secondarily infected gumma." Treatment was instituted in the form of bismuth and iodides. The patient did not return for completion of treatment.

CASE 3.—A. C., a woman, aged 49, in whom gummatous cervical adenitis was diagnosed, had been referred from the Surgery Department because of this pathologic report: "Lymph nodes completely replaced by multiple caseating gummas. Very little lymph gland structure remaining. The entire gland shows a marked syphilitic lesion." Further examination revealed enlargement of the axillary glands, pea to almond sized. The neck lesion healed under the influence of mercury rubs and iodides in large doses. The patient developed a mercurial stomatitis and eventually left the hospital against advice.

CASE 4.—R. C., a man, aged 51, was referred from the Department of Internal Medicine with a diagnosis of aortic aneurysm. A history of gonorrhea but not of syphilis was obtained. He complained of pain in the left upper quadrant associated with meals and made worse by food, of dizziness, and of a loss of 40 pounds (18 Kg.) in five months; he had also noticed a difference in the radial pulses. There was no definite edema. He stated that a recent spinal fluid examination had been negative. Examination revealed an epithrochlear, axillary and inguinal adenitis. A fusiform tumor was palpated just above and to the left of the umbilicus, which pulsated with systole. There was a rough blowing systolic murmur transmitted to the femorals. The blood pressure on the right was 138 systolic and 86 diastolic; on the left, 86/70. Occasional extrasystoles were heard. A roentgenogram showed no cardiac enlargement; a prominent aortic knob was apparent, with widening of the first portion of the arch with some squaring, indicating syphilitic aortitis. No definite aneurysm of the innominate or abdominal aorta was found. Treatment of the syphilis was not deemed advisable.

CASE 5.—P. G., A man, aged 39, was referred from the Surgery Department because of a swelling in the groin, which on pathologic examination was reported as "hyperplastic lymphadenitis." It was said to look more like a venereal bubo (syphilis plus pyogenic infection) than anything else; there was no neoplasm. The swelling in the groin had started with chills and fever. No history of syphilis was available, and except for hyperactive reflexes no evidence of syphilis was found. Treatment was decided against.

One patient with hereditary syphilis showed a negative Kahn test in the presence of clinical signs:

CASE 6.—I. B., a girl, aged 15, was sent to the clinic for treatment because a blood test taken at a nearby institution had been positive. The Kahn test was discovered to be negative. There was a definite history of exposure. Examination revealed characteristic stigmas of congenital syphilis: the bossae were prominent, the palate was high-arched, and the teeth were widespaced but not definitely hutchinsonian; there was thickneing of the epiphyses at the wrists, ulnar deviation of the middle fingers, anterior bowing of the right tibia, and diminished reflexes. There was also an axillary and inguinal lymphadenitis. The spinal fluid was negative. After three injections of neoarsphenamine the blood Kahn reaction became three plus.

In one case, which was considered to be a latent phase of syphilis, the reaction was negative:

CASE 7.—E. B., a woman, aged 28, was referred from the Department of Gynecology, where her condition had been diagnosed as mild pelvic inflammation. The admission Kahn test was negative but became four plus in eleven days without treatment. Examination revealed only an axillary and inguinal adenitis. The spinal fluid was negative. Treatment was instituted. Because the patient did not return soon after beginning treatment, no opportunity was offered for further study, and therefore this cannot be considered with certainty a case of syphilis.

Five patients in whom a diagnosis of cerebrospinal syphilis had been made and who had not received treatment showed negative blood Kahn reactions:

CASE 8.—W. C., a man, aged 61 with a diagnosis of tabes dorsalis, was referred from the Department of Internal Medicine, where he had been treated for diabetes. He gave a definite history of a primary sore eighteen years previously. He complained of tingling in the right hand, and an unsteady gait. Examination revealed that the right pupil was irregular and four or five times as large as the left; neither reacted to light, but both reacted in accommodation. There was an axillary and inguinal adenitis, pea to bean sized. The liver was just palpable. The knee jerks were absent, and deep tendon sensibility was diminished. There was no particular swaying in the Romberg position. The spinal fluid was negative, except for a positive presumptive test. The patient was given mercury and iodides by mouth.

CASE 9.—A. C., a woman, aged 44, with a diagnosis of tabes dorsalis, referred from the Department of Internal Medicine, gave a history of pain in the abdomen, numbness in the legs, nervousness, and three miscarriages. There was no ataxia. Examination revealed that the pupils did not react to light or in accommodation. There was an axillary and inguinal adenitis, and inconstant knee jerks. A diagnosis of tabes dorsalis was made, and confirmed by the Department of Neurology. The spinal fluid examination revealed a negative Kahn test, a positive presumptive Kahn test, no increase in solids, and a colloidal gold reaction of 4333210000.

CASE 10.—S. H., a woman, aged 60, with a diagnosis of Charcot joint, referred from the Department of Orthopedic Surgery, gave a history of numbness of the hands and incontinence of urine eight years previously but not now present. The pupillary reactions were normal; there was an axillary and inguinal adenitis; the reflexes were absent, and the right knee was found to be a typical Charcot joint. She was given mercury and iodides by mouth. A spinal fluid examination was not made.

CASE 11.—A. M., a man, aged 34, with a diagnosis of dementia paralytica, gave a history of a chancre seven or eight years previously. He had been a drug addict for fourteen years. Of late he had noticed slurring of the speech and headaches. Examination revealed a facies suggestive of dementia paralytica, a generalized lymphadenitis including both epitrochlears, increased reflexes, and a fairly typical speech defect. The spinal fluid in this case was not examined, as the patient did not return to the hospital and treatment had not yet been prescribed.

CASE 12.—A. C., a man, aged 37, was diagnosed as having cerebral thrombosis and syphilis of the central nervous system, although no history of syphilis was obtainable. He complained of a paralysis of the left arm following an injury to the elbow, which cleared up only to recur. There was difficulty with speech. Examination showed normal eyes, diminution of all the right sided reflexes, a facial palsy, and normal left sided reflexes. On this basis the diagnosis of cerebral thrombosis and central nervous system syphilis was made. The spinal fluid was negative. Later a diagnosis of brain tumor was considered, but the roentgenograms were inconclusive. One injection of neoarsphenamine was given, and further treatment was decided against.

### TREATED CASES OF SYPHILIS

The group of patients with syphilis who had received treatment either at the clinic or elsewhere included 714, in many of whom blood Kahn tests were repeated on their coming for continued treatment. Of these, 106 patients were referred to the clinic by other departments either for examination regarding possible syphilis or because of positive serologic tests. As shown in table 2, six blood tests were made on patients with primary syphilis, five of which were positive and one negative. In the secondary group were seven patients, all of whom gave four plus reactions. In the tertiary group eighteen examinations were made, thirteen of which were positive and five negative. In the latent group of patients there were 220 with positive and 157 with negative reactions. In the group with hereditary syphilis there were fifty-eight positive and seventeen negative reactions. In the group with neurosyphilis there were 123 positive and ninety-eight negative blood Kahn reactions.

TABLE 2.—*Correlation of Kahn Reactions with Clinical Observations in 712 Blood Examinations in Treated Cases of Syphilis*

| | ++++ | +++ | ++ | + | ± | − |
|---|---|---|---|---|---|---|
| Primary syphilis | 3 | .. | .. | 2 | .. | 1 |
| Secondary syphilis | 7 | .. | .. | .. | .. | .. |
| Tertiary syphilis | 10 | .. | 3 | .. | .. | 5 |
| Latent syphilis | 139 | 25 | 17 | 26 | 13 | 157 |
| Congenital syphilis | 41 | 7 | 8 | 2 | .. | 17 |
| Cerebrospinal syphilis | 76 | 29 | 13 | 6 | 9 | 97 |

It may be said in general that in some cases the Kahn reactions became weaker in a manner more or less paralleling the amount of treatment given, whereas in other cases negativity was achieved after only a short course. However, in other patients, notably the group with congenital syphilis, the positivity of the Kahn test did not seem to be affected by any amount of treatment. It is not the policy of this clinic to place too much emphasis on laboratory tests in patients who had received treatment, the patient rather than the serologic reaction being treated. It is for this reason that treatment is in many cases continued after the serologic reactions are no longer positive, or discontinued in the face of continued positivity.

### POSITIVE REACTIONS IN NONSYPHILITIC CASES

I have so far discussed the sensitivity of the Kahn reaction and called attention to a small group of cases of syphilis in which the reactions were negative. There are also several cases of so-called false positive reactions which merit discussion:

CASE 13.—H. Z., a man, aged 21, was referred from the Department of Surgery because of a one plus Kahn reaction which was followed by a plus-minus reaction. No history of syphilis was obtainable. Examination revealed slightly hyperactive reflexes, and a slight anterior bowing of the tibias, which was roentgenologically negative for syphilis. The spinal fluid examination was not deemed necessary. The patient had not received any antisyphilitic therapy. A diagnosis of syphilis was not made.

CASE 14.—J. H., a man, aged 38, was referred from the Department of Surgery because of a plus-minus Kahn reaction, which on repetition was found to be negative. A history of "soft chancre" twenty years previously was obtained, but no other history was elicited. Examination revealed slightly hyperactive reflexes but no further evidences of syphilis. The spinal fluid was not examined. The patient had not had antisyphilitic therapy. A diagnosis of syphilis was not made.

CASE 15.—R., a man, aged 21 (?), reported to the hospital as a prospective blood donor. The blood gave a two plus reaction, which a week later became negative with a positive presumptive test. A week later the reaction was negative. Examination did not reveal any evidence of syphilis, and no history was obtainable. A diagnosis of syphilis was not entertained.

Of the remaining 1,286 patients presenting dermatologic conditions of one kind or another, and who gave negative reactions with the Kahn test, nothing further need be said.

### COMMENT

The Kahn test shows its strongest degree of positivity in the untreated group of florid secondaries, as well as in the treated group of secondary syphilids. These cases are 100 per cent four plus. In the earlier and later phases of the disease there occurs an occasional negative reaction. This is readily comprehensible in the group of early primaries in which the serologic response has not, perhaps, had a chance to manifest itself. Negativity in the presence of gummas and cardiac syphilis is difficult to explain, and yet it occurs occasionally with all tests for syphilis available today. There was one case in which a negative Kahn test became positive in a few days without treatment, probably a case of latent syphilis. In the group of patients with congenital syphilis, one case which was negative previous to treatment became rapidly three plus following a short course of treatment. As for the positive Kahn reactions obtained in nonsyphilitic cases, it is significant that they were relatively weak—two plus and below. The fact that these reactions were not persistently positive but changed to negative in two of the three cases is noteworthy. The case of the donor with a rapidly shifting serologic response is of especial interest in this group.

Among the treated group of patients there was, as pointed out, a considerable shifting in the positivity of the reactions. These do not necessarily parallel the amount of treatment and tend most to remain fixed in the group with congenital syphilis. It has further been observed in this clinic that the tendency to become seronegative depends somewhat on the duration of the infection and the background of early treatment.

### SUMMARY

A study was made of the correlation of the Kahn reaction in blood serums with the clinical observations in 2,070 examinations. Of these, 1,286 negative reactions were obtained in the presence of pure dermatologic conditions, and no further comment is necessary. The cases of syphilis were divided into two groups, untreated and treated. In the first group of eighteen primary cases, the test failed to detect nine early cases. The test showed a uniform four plus reaction in fifty-one cases of secondary syphilis. In five of twenty-five cases of tertiary syphilis, one of seventy-three cases of latent syphilis, one of sixty-two cases of hereditary syphilis, and five of forty-seven cases of untreated cerebrospinal syphilis, the test was negative. In the treated group, as in the case of the Wassermann test, parallelism between the amount of treatment and the serologic response was not uniformly observed. It is apparent that the Kahn test has its greatest value as a diagnostic test and not as a measure of therapeutic response. With regard to specificity, the Kahn test showed two weakly positive reactions and one two plus reaction in nonsyphilitic patients. On the basis of these studies, the test was shown to possess a high degree of sensitivity and specificity for syphilis.

# FATAL HEPATOGENIC HYPOGLYCEMIA FOLLOWING NEOARSPHENAMINE *

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In the era of undernutrition in diabetic therapy, low blood sugar was observed in several cases of severe diabetes.[1] With the introduction of insulin, "the symptom-complex hypoglycemia" became of more general interest.[2] It was appreciated both then and later[3] that symptoms were not an invariable accompaniment of low blood sugar; many authors have shown that they appear at varying levels.[4]

The syndrome of spontaneous hypoglycemia without diabetes was described in 1924 by Harris,[5] who thought it due to hyperinsulinism or dysinsulinism. Wilder, Allan, Power and Robertson[6] three years later published full clinical, biochemical and pathologic studies of a case of severe hypoglycemia arising from carcinoma of the pancreatic islands with metastases. The liver in this case was loaded with glycogen, but injection of epinephrine as well as of pituitary extract failed to elevate the blood sugar. When these extracts fail to elevate low blood sugar, hypoglycemia may therefore be due to hyperinsulinism, although it has been shown experimentally[7] that each also fails in the absence of the liver. In two more recent cases of extreme hypoglycemia,[8] insular neoplasm was demonstrated at necropsy. Allan[9] reported partial resection of an apparently normal pancreas for intractable hypoglycemia with some improvement, and cited a similar case from the literature. The possibility of hyperinsulinism from nervous stimulation of an organically sound pancreas has been suggested in explanation. The unverified diagnosis of hyperinsulinism had been made in a number of other cases.

Hypoglycemia has also been laid to failure of the suprarenal glands. Lereboullet and Pierrot[10] considered blood sugar as low as 0.045 per cent in "malignant diphtheria" (and in one case of scarlet fever) due to suprarenal insufficiency. Greenwald and Eliasberg[11] reported extreme hypoglycemia in two fatal cases of extensive burns. On the basis of experimental work, they conclude that death following such burns, if the patient survives the initial shock, results from suprarenal failure. According to the extensive review of the literature by Sendrail and Planques,[12] Porges in 1910 first observed blood sugar below 0.04 per cent in Addison's disease, and three similar cases have since been added. A fatal case of Addison's disease in a farmer, aged 24, has been described more recently by Wadi.[13] When apparently moribund, with a blood sugar of 0.032 per cent, this patient was revived for a time by means of dextrose intravenously. Epinephrine caused a fall of 15 mg. per hundred cubic centimeters in the blood sugar. In addition to tuberculous destruction of the suprarenal glands, the capsule of the liver was thickened and in its substance a caseous mass was seen. Microscopic study of the liver revealed perilobular infiltration with round cells. Rowntree,[14] on the other hand, found the average blood sugar in forty-eight cases of Addison's disease 0.075 per cent (0.045 in each of two) but did not think that any of the symptoms in his series were due to hypoglycemia. Against the rôle of the suprarenal glands in hypoglycemia, moreover, is the definitive work of Stewart,[15] who removed the suprarenal glands from 200 dogs. Most of the animals survived the operation from ten to twelve days, a few for several days longer, the author finding that the blood sugar remained within normal limits till near death, "when a moderate hypoglycemia may occur." It is then not probable that failure of the suprarenal glands alone causes hypoglycemia. But it has been shown by Marañon[16] that persons with Addison's disease are peculiarly susceptible to insulin.

Evidence, mostly experimental, has also been adduced to involve in hypoglycemia, the pituitary, thyroid and parathyroid glands and even the gonads. Cushing's work on the hypophysis[17] is classic. Wilder[18] has studied extensively the relation of diseases of the thyroid gland to blood sugar and has concluded that, except as thyroid dysfunction accelerates or retards general metabolism, there is no relation. Odin and Petterson[19] reported a blood sugar of 0.02 per cent and, at necropsy, hyperplasia of the pancreatic islands, atrophy of the thyroid and suprarenal glands, and sclerotic ovaries. Stenström's[20] first case (blood sugar 0.035 per cent) was clinically similar though not fatal. Longcope[21] described hypoglycemic symptoms (blood sugar 0.041 per cent) in a case of scleroderma; necropsy revealed atrophy of one suprarenal gland and bilateral interstitial orchitis.

Subsequent to repeated dextrose tolerance tests in two cases of renal diabetes, Gibson and Larimer[22] observed classic symptoms of hypoglycemia (blood sugar, 0.040). On the basis of a history of similar attacks on the part of one patient, they said, "It seems likely that hypoglycemic symptoms not artificially pro-

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1. Joslin, E. P.: The Treatment of Diabetes Mellitus, ed. 4, Philadelphia, Lea & Febiger, 1928, Hypoglycemia, p. 214.
2. Fletcher, A. A., and Campbell, W. R.: The Blood Sugar Following Insulin Administration and the Symptom-Complex Hypoglycemia, J. Metab. Research **2**: 637 (Nov.) 1922. Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Further Clinical Experience with Insulin, Brit. M. J. **1**: 8 (Jan.) 1923.
3. Maddox, S. J., and Trimble, H. C.: Prolonged Insulin Hypoglycemia Without Symptoms, J. A. M. A. **91**: 616 (Sept. 1) 1928. Peters, C. A., and Rabinowitch, I. M.: A Case of Diabetes Mellitus Showing Aglycemia Without Symptoms, Am. J. M. Sc. **178**: 29 (July) 1929.
4. Laroche, Lelourdy and Bussière: Les hypoglycémies spontanées chroniques, Presse méd. **36**: 513 (April 25) 1928.
5. Harris, Seale: Hyperinsulinism or Dysinsulinism, J. A. M. A. **83**: 729 (Sept. 6) 1924.
6. Wilder, R. M.; Allan, F. N.; Power, M. H., and Robertson, H. E.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia, J. A. M. A. **89**: 348 (July 30) 1927.
7. Mann, F. C.: The Effects of Complete and of Partial Removal of the Liver, Medicine **6**: 419 (Dec.) 1927.
8. Thalhimer, William; and Murphy, F. D.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia, J. A. M. A. **91**: 89 (July 14) 1928. McClenahan, W. U., and Norris, G. W.: Adenoma of the Islands of Langerhans with Associated Hypoglycemia, Am. J. M. Sc. **177**: 93 (Jan.) 1929.
9. Allan, F. N.: Hyperinsulinism: Report of Two Cases, Arch. Int. Med. **44**: 65 (July) 1929.
10. Lereboullet, P., and Pierrot, R.: La glycémie dans la diphthérie, Arch. de méd. d. enf. **31**: 148 (March) 1928.
11. Greenwald, H. M., and Eliasberg, H.: The Pathogenesis of Death from Burns, Am. J. M. Sc. **171**: 682 (May) 1926.
12. Sendrail, Marcel; and Planques, Jean: Les états hypoglycémiques, Gaz. d. hôp. **100**: 1105 (Aug. 20), 1137 (Aug. 27) 1927.
13. Wadi, W.: Ueber Hypoglykämie bei Morbus Addisonii, Klin. Wchnschr. **7**: 2107 (Oct. 28) 1928.
14. Rowntree, L. G.: Studies in Addison's Disease, J. A. M. A. **84**: 327 (Jan. 31) 1925.
15. Stewart, G. M.: The Adrenal Glands, Arch. Int. Med. **43**: 733 (June) 1929.
16. Marañon, G.: Action de l'Insuline dans l'Insuffisance surrénale, Presse méd. **33**: 1665 (Dec. 19) 1925.
17. Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, J. B. Lippincott Company, 1912.
18. Wilder, R. M.: Hyperthyroidism, Myxedema and Diabetes, Arch. Int. Med. **38**: 736 (Dec.) 1926.
19. Odin, M.: Discussion, Acta med. Scandinav., 1928, supp. 26, p. 182. Petterson, A. S.: Ein Fall von spontanen hypoglykämischen Koma, ibid. **69**: 232, 1928.
20. Stenström, Thor: Einige Bemerkungen über spontanes hypoglykämisches Coma, Deutsches Arch. f. klin. Med. **152**: 173 (Aug.) 1926.
21. Longcope, W. T.: Hypoglycemia in Scleroderma: The Metabolism in Eight Cases with Reference to the Function of Glands of Internal Secretion, J. A. M. A. **90**: 1 (Jan. 7) 1928.
22. Gibson, R. B., and Larimer, R. N.: Hypoglycemic Symptoms Provoked by Repeated Glucose Ingestion in Case of Renal Diabetes, J. A. M. A. **82**: 468 (Feb. 9) 1924.

duced are a definite clinical entity." This paper appeared several months before that published by Harris.[5] In Scandinavia the blood sugar in lactating women (and in cows) has been studied extensively.[23] Af Klercker [24] even produced a blood sugar of 0.040 per cent experimentally by placing a wetnurse on an antidiabetic diet. Schröder,[25] by means of a similar diet and control of fluid intake, has caused a blood sugar of 0.045 per cent with symptoms in a woman, aged 23. Perhaps with this experiment should be linked a case from China.[26] Hypoglycemic symptoms developed (blood sugar, 0.075) following partial starvation and vigorous purgation. According to Sendrail and Planques [12] and others, hypoglycemia has been observed in progressive muscular atrophy without symptoms, in some cases of starvation and of pernicious vomiting of pregnancy, and after prolonged strenuous exercise, such as Marathon races and parturition. Convulsions in early life have been attributed to blood sugar varying from 0.020 to 0.37 per cent.[27]

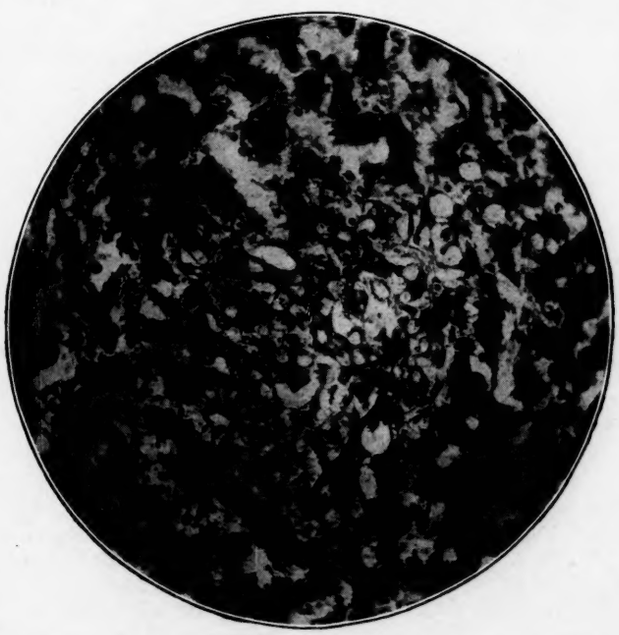
Mann and Magath [28] in 1922 showed that following hepatectomy in the dog the animal died in from four to nine hours with low blood sugar, but that with intravenous injections of dextrose it could be kept alive eighteen hours or even much longer, to die from other causes not so well understood. Mann and Bollman [28] have since demonstrated that removal of most of the liver does not greatly lower the blood sugar. Thus elimination of the hepatic function concerned with carbohydrate metabolism in man should result in hypoglycemia, but this has been observed only in rare instances. In such instances, as in the terminal stages of cirrhosis, acute yellow atrophy, and extensive tumors of the liver, hypoglycemia is usually not only moderate but obscured by other symptoms. It is probable that some of these cases of acute yellow atrophy have been due to arsenic poisoning. It has long been known that arsenic, chloroform, phosphorus, carbon tetrachloride and certain other poisons affect the liver almost specifically. Kolmer and Lucke,[29] it must be admitted, administered arsphenamine and neoarsphenamine in ten times the therapeutic dose to rats and concluded that neoarsphenamine was relatively less hepatotoxic and more nephrotoxic than arsphenamine. In their histologic studies after such arsenic poisoning, the parenchymal cells exhibited nuclear changes and vacuolated cytoplasm, in which were some fat droplets and other small deposits of a hyaline substance; the distended sinuses were filled with partially fused red blood cells. Minot and Cutler [30] found experimentally that, after the liver was poisoned with chloroform or carbon tetrachloride, it could be restored to normal and the symptoms of the condition relieved by intravenous injection of calcium and dextrose. Dextrose alone had but a transitory effect and rapidly disappeared from the blood stream, but if calcium was given in sufficiently large quantities before the poison, or intravenously after the development of symptoms, the sugar was restored to its normal percentage and remained there. McIntosh [31] reported a case of phosphorus poisoning in a child in which the blood sugar was 0.025 per cent and other evidences of grave hepatic disorder were present. The patient recovered following intravenous and subcutaneous administration of dextrose. McLean, MacDonald and Sullivan [32] were less successful; in their case the blood sugar was 0.055 per cent and the predominant signs were coma, jaundice and purpura.

The importance of both poisoning of the liver by the arsphenamine group and of hepatic syphilis has long been recognized. Pick (according to Memmesheimer [33]) in 1922 reported a slight increase in the blood sugar in six of twelve cases of syphilis. Memmesheimer's somewhat larger series was in accord with this, and he thought the increase due to the influence of the syphilitic virus on the vegetative nervous system and, perhaps to some extent, on the hepatic parenchyma. In one case of his group, however, during arsphenamine dermatitis, the blood sugar dropped to 0.042 per cent, with restoration to 0.072 on recovery. With two exceptions [34] (fasting blood sugar, 0.054 per cent in one and, one hour after the administration of neoarsphenamine, 0.046 per cent in the other), this is the only case of syphilis, with or without treatment, that has come to our attention in which the blood sugar was less than 0.060 per cent. Schulmann [35] considered hyperglycemia in syphilis probably due to hepatic dysfunction. Neumark and Tschatschkowska [34] believed it essentially a neurogenic phenomenon brought about largely through excitation of the suprarenal glands; they explained the rare case of hypoglycemia as the result of glycogen depletion of the liver caused by the preceding hyperglycemia. Rosen and Krasnow [36] seem to have been the only men in this country to write about blood sugar in syphilis to date, although Myers [37] is preparing an article based on an enormous series of blood sugar determinations.

"In most cases of spontaneous hypoglycemia," Allan [9] said a few months ago, "direct evidence of hepatic disorder is not manifested. Yet it is possible that the liver may still be at fault. It is conceivable that one function may fail, although other functions are intact." This concept has already been proved once.[38] The liver has been held responsible for hypoglycemia in several clinical reports, as in those of Wagner, Parnas and Helmreich,[39] Cammidge,[40] Snapper and van Crefeld [41] and Laroche, Lelourdy and Bussière.[4] In the much studied case of Wagner, Parnas and Helmreich, the evidence of hepatic dysfunction consisted only of

23. Odin (footnote 19). Stenström, Thor: Einige Beobachtungen von "spontaner" hypoglykämischer Reaktion beim Menschen, Acta med. Scandinav., 1928, supp. 26, p. 171; and others.
24. Af Klercker, quoted by Widmark, E. M. P.: On Lactation Hypoglycemias, Acta med. Scandinav., 1928, supp. 26, p. 165.
25. Schröder, Inga: Ein Fall von alimentärer Hypoglykämie, Acta med. Scandinav., 1928, supp. 26, p. 157.
26. Shih-Hao, Liu; and Hsiao-Chien, Chang: Hypoglycemia: Report of a Case Unassociated with Insulin Administration, Arch. Int. Med. **36**: 146 (July) 1925.
27. Griffith, J. P. C.: Hypoglycemia and the Convulsions of Early Life, J. A. M. A. **93**: 1526 (Nov. 16) 1929.
28. Cited by Mann (footnote 7).
29. Kolmer, J. A., and Lucke, Baldwin: A Comparative Study of the Histologic Changes Produced Experimentally in the Liver and Kidneys of the Rat by Arsphenamine and Neoarsphenamine, Arch. Dermat. & Syph. **9**: 321 (March) 1924.
30. Minot, A. S., and Cutler, J. T.: Guanidine Retention and Calcium Reserve as Antagonistic Factors in Carbon Tetrachloride and Chloroform Poisoning, Proc. Soc. Exp. Biol. & Med. **26**: 138 (Nov.) 1928.
31. McIntosh, Rustin: Acute Phosphorus Poisoning, Am. J. Dis. Child. **34**: 595 (Oct.) 1927.
32. McLean, Stafford; MacDonald, Aildred; and Sullivan, R. C.: Acute Phosphorus Poisoning from the Ingestion of Roach Paste: Fatal Case in Child, J. A. M. A. **93**: 1789 (Dec. 7) 1929.
33. Memmesheimer: Ueber den Traubenzuckergehalt des Blutes im Syphiliskranken, Arch. f. Dermat. u. Syph. **142**: 317 (March) 1923.
34. Neumark, S., and Tschatschkowska, L.: Ueber das Verhalten des Blutzuckers bei Lues, Dermat. Wchnschr. **85**: 1587 (Nov. 12), 1619 (Nov. 19), 1646 (Nov. 26) 1927.
35. Schulmann, E.: Le rythme de la glycémie au cours de la syphilis, Presse méd. **32**: 765 (Sept. 20) 1924.
36. Rosen, Isadore; and Krasnow, Frances: The Sugar Content of Whole Blood in Syphilis, Arch. Dermat. & Syph. **16**: 16 (July) 1927.
37. Myers, C. N.: Personal communication to the authors.
38. Nadler, W. H., and Wolfer, J. A.: Hepatogenic Hypoglycemia Associated with Primary Liver Cell Carcinoma, Arch. Int. Med. **44**: 700 (Nov.) 1929.
39. Wagner, Richard; and Parnas, J. K.: Ueber eine eigenartige Störungen des Kohlenhydratstoffwechsels und ihre Beziehungen zum Diabetes Mellitus: Eine klinisch-experimentelle Studie; II, Ztschr. f. d. ges. exper. Med. **21**: 361, 1921. Helmreich, Egon; and Wagner, Richard: Ueber die Phasen des Kohlehydratumbaues; V, ibid. **45**: 490, 1925.
40. Cammidge, P. J.: Hypoglycemia, Lancet **2**: 1277 (Dec. 20) 1924.
41. Snapper and van Crefeld: Un cas d'hypoglycémie avec acétonémie chez un enfant, Bull. et mém. Soc. méd. d. hôp. de Paris **52**: 1315 (July 20) 1928.

enlargement of the liver and its inability to store glycogen; there was evidence also of disease of the pancreas and of the thyroid gland. Cammidge's patient improved on extracts of pituitary and parathyroid glands. These two cases might therefore be placed more appropriately perhaps in the pluriglandular group. However, a proved case of hepatogenic hypoglycemia of severity comparable to that due to insular neoplasm (that is, below 0.040 per cent) without other gross evidence of hepatic dysfunction did not appear in the literature until November, 1929. This case, which was thoroughly studied by Nadler and Wolfer [38] and their associates, is classic. The patient was not jaundiced, the direct van den Bergh reaction was negative, and the result of the bromsulphalein test for liver function was normal. Fructose tolerance tests were not made. Death was due to primary liver cell carcinoma, which had replaced about four fifths of the parenchyma and injured the remainder. The glycogen content of the uninvolved part of the liver was unusually low. After the thoroughness of their studies, it requires boldness to report a case with only the data available to us. However, as the extreme hypoglycemia can be most easily explained by the hepatic disease demonstrated, although there was little other evidence of dysfunction of the liver during life, and as we have found no similar case with necropsy, we offer it:



Microscopic appearance of section of the liver, showing toxic hepatitis.

REPORT OF CASE

*History.*—An apparently healthy laborer, aged 38, who stated that he had never had any diseases, was sent to the federal penitentiary, July 18, 1929. On the basis of two strongly positive Wassermann reactions, syphilis was diagnosed and routine treatment instituted. He received 0.6 Gm. of neoarsphenamine intravenously, August 1, and 0.9 Gm., August 8, 15, 22 and 29 and September 5. He was seen by one of us (J. B. C.) twice during this course for epidermophytosis. September 8, he complained of itching of the skin. Calamine lotion did not relieve it and he returned four days later with the same subjective complaint. September 14, for the first time, a faint rash appeared and he was admitted at once to the prison hospital. His best weight was 176 pounds (79.8 Kg.); his weight on entering the penitentiary was 173 pounds (78.5 Kg.), and on admission to the hospital 162 pounds (73.5 Kg.).

The patient appeared older than 38, his given age, but was well nourished and well developed. There was slight edema around the eyes and of the ankles. A pink erythematous eruption covered the abdomen and back. The pupils were equal and regular but reacted sluggishly to light; the sclerae were not jaundiced. Pyorrhea was marked. The thyroid gland, heart and lungs were normal. Peripheral arteriosclerosis was moderate; the systolic blood pressure was 120, the diastolic 84. The abdomen was well relaxed; there was no tenderness or rigidity, and the edge of the liver could not be palpated. A scar was seen on the corona of the glans penis, and the patellar reflexes were slightly hyperactive.

*Course.*—The patient was put to bed, and milk, sweetened fruit juices and other fluids were forced. Daily medication consisted of sodium thiosulphate 1 Gm. intravenously, salines and sedatives by mouth, and local applications to the skin. Within thirty-six hours the eruption became generalized. The itching was intense; the patient used a hairbrush to scratch himself vigorously and he believed that he would "go crazy." Edema closed his eyes. After a few days the skin began to exfoliate lightly, the pruritus became less severe and the edema subsided. Except for a moderate amount of trouble in the axillary and crural regions, the condition of the skin did not bother him any more. However, the patient became weak and restless, and entered into a confusional state. At times, though he might appear to recognize the physician, he would stare at him without speaking; at other times, although disoriented, he could be aroused enough to respond intelligently. Sometimes he might even appreciate that he had been irrational a few hours earlier and express regret for the trouble he had caused; but, perhaps before the examiner left the room, he would be maniacal again.

In an attempt to secure a better understanding of the condition, a blood analysis [42] was done, September 22, with the following results: blood sugar, 35; nonprotein nitrogen, 22; urea nitrogen, 7.4, and creatinine, 3.2.

Dextrose (25 Gm.) was then administered daily. September 26, blood was drawn about ten hours after the intravenous injection of dextrose and examined again, [43] with the following result: blood sugar, 27; nonprotein nitrogen, 33; urea nitrogen, 13, and creatinine, 2.2.

That day 100 Gm. of dextrose in divided doses was given intravenously and feedings were continued throughout the night. The next morning the blood sugar was 0.139 per cent. There was temporary improvement, but the patient became irrational again that afternoon. Dextrose intravenously was administered twice a day after this, but the patient became stuporous and unable to swallow, with incontinence of the bowel and bladder. He died, October 3.

In spite of his mental state the patient remained cooperative for the most part and continued to take the liquid diet well until a day or two before death. At no time were there convulsions, nor did he complain of abdominal pain or nausea; he vomited once toward the end. Jaundice was never discernible and, although bile in the urine was reported once, the stools were of normal color. Albuminuria was present at the first examination after admission but not at any subsequent ones, and glycosuria was noted only on the day that he received 100 Gm. of dextrose intravenously. One specimen of urine was "loaded with crystals," but the nature of these was not determined. The Wassermann reaction was negative with 0.2 cc. of spinal fluid, positive with 0.4 cc., and strongly positive with 0.8 cc.; the fluid contained 24 cells per cubic millimeter. After the first four days in the hospital there was moderate

42. Dr. John Funké made the chemical examination of the blood in this case. Blood sugar was determined by the Folin-Wu method. Specimens of blood are sent from the penitentiary to Dr. Funké's laboratory several times a week. Blood sugar less than 0.09 per cent and, except in diabetic cases, more than 0.108 per cent is rare. We believe we are therefore justified in assuming that the blood sugar values reported are essentially correct.

43. This specimen was examined within an hour of collection. There was perhaps no dextrose in the blood at this time: it has been shown in a study of 100 healthy adults that the average specimen of blood contains nonfermentable reducing substances equivalent to 27 mg. per hundred cubic centimeters (Rabinowitch, I. M.: The Significance of the Nonfermentable Reducing Substances in the Blood in Diabetes, Biochem. J. 22: 753, 1928).

fever in the afternoon. The pulse ranged from 80 to 100 the first week and from 90 to 110 the second, but during the last three days it was recorded at 120 and higher. The rate of respiration tended to rise, varying from 28 to 40 during the last three days, with an agonal rate of 60.

*Necropsy.*—Examination was made less than one hour after death. The liver weighed 2,030 Gm. and its surface was mottled. The viscus was perceptibly firmer than normal to the finger, and the knife encountered moderate resistance. On section the edges inverted; the cut surface showed some oozing and evidence of fatty change; there was no neoplasm. There were no adhesions about the gallbladder, the walls of which appeared normal and enclosed apparently normal bile. The common duct was patent. The pancreas was of normal size, color and consistency; it did not contain any nodules. Particular attention was paid also to both the cortex and the medulla of the suprarenal glands; both glands appeared grossly normal in every way. The spleen, which was about four times the usual size, was dark red, friable and almost jelly-like. No other significant changes were observed; the head and the thyroid gland were not examined.

*Microscopic Studies.*—On study of sections of the liver with the low power of the microscope, distended sinusoids between small cords of parenchymal cells, with fatty changes, and perilobular infiltration with round cells, were the striking features. There was no evidence of bile stasis. Many of the central veins were dilated and yet appeared almost empty. Higher magnification of the parenchymatous cells revealed nuclear changes: some cells contained more than one nucleus; some nuclei were enlarged and pale, others were small and deeply stained. The peripheral clumping of chromatin spoken of by Kolmer and Lucke was not observed. Clumped around the nuclei of many scattered cells were golden brown particles (fairly coarse under the oil immersion lens). Some of the cells were swollen; more were decreased in size. The cytoplasm was vacuolated and, associated with the larger fat droplets, in some areas were bits of dark green pigment, presumably bile pigment. There was evidence of increased intracellular and extracellular fluid. The reticulo-endothelial layer was distinctly separated from the parenchymal cells in many places, and some of the Kupffer cells were swollen and enlarged. The few red blood cells present were poorly stained, and apparently for the most part agglutinated and undergoing hyalinization at the periphery of the sinuses. In the sinusoids, however, a number of plasma cells and other types of the lymphocytic series were present. The anatomic diagnosis was toxic hepatitis.[44]

A number of sections from different parts of the pancreas were studied without increase in the size, number or appearance of the islands being found, or evidence of any pathologic change elsewhere. The kidneys were intensely engorged, but the tubules appeared normal.

## COMMENT

Although dextrose intravenously prolongs the life of dehepatized dogs, it will not do so indefinitely and the cause of ultimate death has not yet been fully explained. We believe that dextrose intravenously prolonged the life of our patient in the same way. We did not know during his life that calcium had been proved of value in experimental hypoglycemia due to poisoning of the liver. It is true that we did not perform tests with epinephrine or pituitary extract, or do a number of other things that should have been done in the interests of science. We regret this; but federal penitentiaries were not constructed for the purpose of promoting medical research, and we do not believe that more elaborate studies would have altered treatment or result in this case.

Of the many possible causes of hypoglycemia, it seems to us that all can be excluded except failure of the carbohydrate-regulating function of the liver. We cannot prove that this failure was not neurogenic, but it would seem more probably the result of the demonstrated parenchymatous lesions. That the carbohydrate-regulating function of the liver may fail from the effect of poison has been proved both experimentally and clinically. Nadler and Wolfer established that it may fail although other functions are intact. In our case the similar clinical features and the microscopic studies of the liver make us believe, although we did not determine the glycogen content of the viscus, that the hypoglycemia was also hepatogenic. It is unquestionable that extreme hypoglycemia developed following the administration of neoarsphenamine, and that the liver was diseased. In each case of dermatitis or other unfavorable symptoms developing under similar conditions, we would therefore urge investigation of the blood sugar. It should be noted that our patient received no further neoarsphenamine after he first complained of pruritus.

Hypoglycemia of hepatic origin with little evidence of other dysfunction of the liver has thus been established as a clinical entity. It is difficult to diagnose; but, when hypoglycemia develops following the administration of arsenic, the liver should be held presumably responsible. Recovery from hypoglycemia due to hepatotoxins has been reported from the intravenous administration of calcium and dextrose experimentally, and of dextrose alone clinically. Since the liver tends to recover from arsenic poisoning spontaneously, when hypoglycemia is present sugar should be forced. It should be given both orally and intravenously in the hope of tiding the patient over until restorative processes reestablish physiologic function. We believe that calcium also should be given.

## SUMMARY

The syndrome of hypoglycemia was brought to popular attention by observation of the effects of overdoses of insulin. It is essentially the same whether of this or of spontaneous origin. The first proved occurrence of severe hepatogenic hypoglycemia without other clinical signs of hepatic disease was reported in November, 1929. Our case is probably the second. It is, we believe, the first report with necropsy of a clinically recognized case of extreme hypoglycemia following the administration of one of the arsenical compounds.

Early recognition of hepatogenic hypoglycemia with the administration of adequate amounts of sugar by mouth and by vein, and of calcium intravenously, may save life.[45]

Medical Arts Building.

44. On account of the unique character of this case, Dr. John Funké, Dr. E. L. Bishop and Dr. J. C. Norris also have studied the sections of the liver. They concur in the diagnosis. Dr. Funké reported on the pancreas and kidneys.

45. Additional references:
Howland, Goldwin; Campbell, W. R.; Maltby, E. J., and Robinson, W. L.: Dysinsulinism: Convulsions and Coma Due to Islet Cell Tumor of Pancreas, with Operation and Cure, J. A. M. A. **93**: 674 (Aug. 31) 1929.

Syphilitic patients in the federal penitentiary in Atlanta do not now receive more than 0.6 Gm. of neoarsphenamine at one injection, in accordance with the recent teaching of Schamberg and D. C. Smith.

**The Speaking Voice.**—It is the rising and falling of the pitch of the speaking voice which carries the emotional message, while the movements of articulation—remote descendants of the original descriptive pantomime made by primitive man—carry the intentional message which accompanies it. Except in its full-dress form—namely, song—we have no notation for the emotional language; yet it has great importance.—Paget, Richard: Human Speech, New York, Harcourt, Brace & Co., p. 182.

# THE PREVENTION OF DEFORMITIES IN CHRONIC ARTHRITIS

## III. THE LOWER EXTREMITY

LORING T. SWAIM, M.D.
AND
JOHN G. KUHNS, M.D.
BOSTON

Deformities occurring in the lower extremity are important because they hinder or prevent walking. So far as they modify the patient's outlook and disturb his mental well being, they are probably more important than deformities in other parts of the body. The idea of crippling is peculiarly associated with disturbances in locomotion. The sense of difference from others and of handicap which such deformity brings is the most important cause of the psychopathic tendencies of the cripple.[1]

### THE HIP

The hip joint, subjected mechanically from its location to many strains and minor traumas, is often affected in arthritis. In arthritis of the spine, particularly in the rapidly advancing type described by Strümpell and by Marie,[2] an associated involvement of the hip is common. Moreover, during the course of an arthritic process in any other part of the body, a

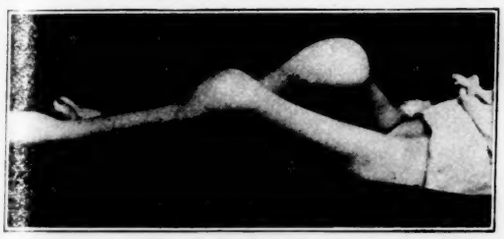


Fig. 1.—Attention is called to the flexed and adducted hips and swollen, flexed knees. Extensive atrophy of the thigh and calf muscles had taken place.

hip joint may be attacked by the disease. Deformities here develop insidiously. When the back is not stiff, quite an extensive deformity may develop in the hip unnoticed because it is masked by compensatory increased hyperextension in the lumbar spine.

The early symptoms of arthritis in the hip joint are stiffness and pain. Stiffness and soreness may be present only in the morning or after a period of rest. Pain may come only on walking or in turning over in bed. The pain may be referred to the hip region or to the anterior surface of the thigh. This should be enough to excite suspicion, and the hip joint should be examined. If there is any involvement of the hip joint, a restriction in its normal range of motion will be found, usually accompanied by muscle spasm and pain on movement.

Deformity first becomes evident by an inability to extend the leg fully at the hip, a flexion contracture (fig. 1). Soon an atrophy of the thigh muscles becomes apparent, shown still earlier by accurate measurements of the circumference of the thighs, if but one hip is involved. The flexion of the hip is followed by adduction and sometimes by internal rotation. All this is due to the reflex spasm of the muscles, often aided by the misguided efforts of the patient or his friends to secure comfort. With long standing deformity and with the ravages of the disease within the joint itself, dislocation of the hip comes not infrequently (fig. 2). In other cases in which disintegration of the joint occurs more rapidly, ankylosis comes on with the hip in a deformed position.

Rest in bed is the most effective means at our disposal of preventing deformities at the hip. Deformities

Fig. 2.—Appearance of hips in arthritis, showing dislocation of left hip.

can still develop if nothing further is done, but one of the chief factors causing muscle spasm and pain is eliminated, i. e., weight bearing. With rest in bed in the early stages of deformity there should be frequent change of position. Having the patient lie prone on a firm bed will tend to stretch out any early flexion deformity. Usually, however, this is not enough. The hip may be held in a position of extension by sandbags or traction while adhesive straps may be applied in the line of deformity. When there is much pain and a stubborn tendency to deformity, a plaster cast should be applied with the leg in full extension, with no abduction or adduction and no rotation. If this position cannot be secured, a position as near to it as the comfort of the patient will permit should be obtained; and the plaster should be changed weekly until the desired position results. Long continued use of plaster with the hip

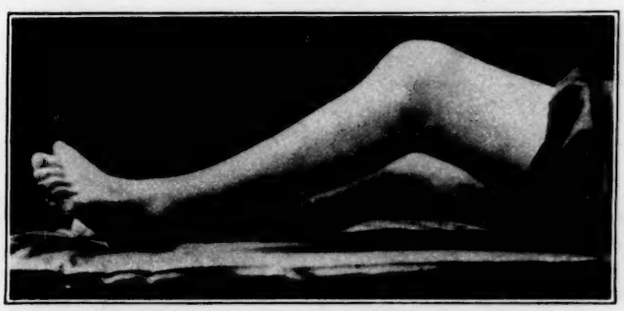


Fig. 3.—Early flexion deformity of the knee in arthritis.

in one position tends to produce ankylosis. When the position of no deformity is secured, the plaster cast should be made into an anterior and posterior half so that it may be removed for physical therapy and exercises. Weight bearing should not be resumed until all muscle spasm has disappeared.

Many procedures have been devised for the correction of deformities at the hip. Unfortunately, these prove disappointing even under the most favorable circum-

1. Crothers, B.: Disorders of the Nervous System in Childhood, New York, D. Appleton & Co., 1926. Richards, E. H.: Bull. Johns Hopkins Hosp. **31**: 286 (Aug.) 1920.
2. Marie, Pierre: Rev. de méd., April 10, 1898.

stances. Whatever method of correction is used it should be undertaken only after the arthritis has become symptomless and inactive. The greatest gentleness must be exercised, for too forceful attempts at correction of deformity may light up a quiet arthritis or may produce a fracture. The simplest procedure is manipulation under anesthesia. This should be followed by a plaster cast worn for several days. This cast includes the pelvis and the entire leg on the affected side. It may be worn for several days and then should be cut into an anterior and a posterior half so that exercises and physical therapy may be given during the day. These exercises, which are planned to strengthen the anterior thigh muscles and the gluteal muscles, must be continued for a long period afterward. Deformity will frequently yield to long continued traction. Operative procedures to correct deformity [3] or to improve motion [4] have been devised and give a certain measure of success, but they can be employed only when the disease has been inactive for at least two years. When roentgenograms of the hip show that ankylosis is inevitable, the hip is held by a plaster cast including the pelvis and the entire leg on the involved side in about 25 degrees of flexion, with no rotation, and in a neutral position in regard to abduction and adduction.

Fig. 4.—Outwardly rotated lower leg; note position of patella and of malleoli.

### THE KNEE

The knee joint stands second in frequency of the joints attacked by arthritis, the finger joints coming first. One of the earliest signs of beginning deformity in the knee joint is the inability to extend the lower leg fully (fig. 3). This appears with the onset of swelling and pain or soon after them. With an arthritis the patient usually keeps the knee flexed because he finds it more comfortable. An atrophy of the muscles on the anterior surface of the thigh comes on quickly. In this condition a subluxation backward of the tibia on the femur is likely to occur.[5] The subluxation may be accompanied by an outward rotation of the lower leg on the femur (fig. 4). The arthritic process, if not checked, goes on to marked injury of the joint surfaces with resistant contractures in the hamstring muscles, fascia and joint capsule. Ankylosis, while it does occur, is not common except in gonorrheal and acute suppurative arthritis.

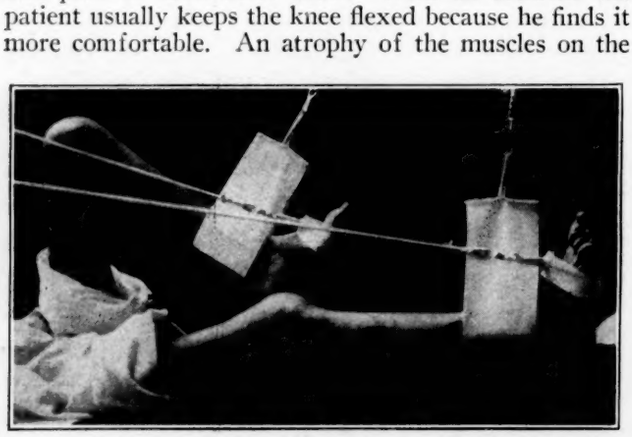


Fig. 5.—Exercising apparatus for leg.

Flexion deformity at the knee can best be prevented when the disease is first recognized by keeping the leg at night in a plaster cast, cut into an anterior and posterior half. This should extend from the groin to the toes and should hold the knee in a position between full extension and 5 degrees of flexion, since hyperextension is particularly painful in arthritis. It need scarcely be mentioned that no walking should be done on a painful, swollen knee; rest in bed is indicated at such times. During the day, physical therapy and exercises for the thigh muscles should be given (fig. 5). When there is already contracture, this can often be corrected by intermittent traction. Plaster casts worn at night and made as nearly straight as the patient can comfortably bear permit a certain amount of relaxation. Such casts may then be changed at weekly intervals, each being a little straighter than the last. Calipers worn for periods of an hour or so several times a day with the knee buckled down as firmly as the patient permits will tend to straighten out the deformity (fig. 6). We would emphasize that, whatever procedure is undertaken, gentleness should be the key word. Rapid correction or manipulation under anesthesia while the disease is active leads only to disaster. Even when the disease is quiescent because of the atrophy of the femur, a fracture can easily occur.

Fig. 6.—Stretching flexion deformity of knees with calipers.

Walking with a bent knee is harmful. Through such strain an arthritis that would otherwise be quiescent is kept active. But when the arthritis is quiescent, walking with protection should be encouraged to combat the atrophy of bone and muscle and to improve the mental outlook of the patient. It is the lesser of two evils. With the use of splints of any sort, in correcting knee deformities, sufficient attention must be given to the hip and foot lest deformities resulting from apparatus occur there. When fixed deformities are present and the arthritis is quiescent, a capsuloplasty [6] will often relieve contracture. When ankylosis is present, an arthroplasty [7] or an osteotomy [8] may be done.

### THE FOOT

When the weight of the body is not borne squarely on the foot, it soon suffers. For this reason, contracture and deformity at the knee or hip frequently cause foot strain and later deformity. With a flexed knee, one of the most frequent of foot disabilities is a broken down anterior arch. External rotation of the leg tends to cause a pronation of the foot. Strain on the foot,

3. Gant: Lancet, December, 1872, p. 881.
4. Baer, W. S.: Am. J. Orthop. Surg. **16**: 94 (Feb.) 1918. Putti, V.: Internat. Clin. **4**: 1 (Dec.) 1928; Nelson System of Surgery **4**: 457-B.
5. Swaim, L. T.: J. Bone & Joint Surg. **10**: 742 (Oct.) 1928.
6. Wilson, P. D.: J. Bone & Joint Surg. **11**: 40 (Jan.) 1929.
7. Campbell, W. C.: Surg. Gynec. Obst. **47**: 89 (July) 1928.
8. Osgood, R. B.: Am. J. Orthop. Surg. **11**: 336 (Oct.) 1913.

moreover, tends to make it less resistant to arthritis. The deformities that commonly occur in the foot with arthritis are: (1) rigid valgus, (2) equinus and (3) a combination of flat anterior arch with cocked-up toes. A stiff, pronated or flat foot[9] is the commonest deformity seen in arthritis of the feet. This pronation of the foot usually precedes the arthritis, the arthritis coming on in a strained foot. When the patient is ill in bed from an arthritis, an involvement of the foot is common if the foot is not adequately protected from strain when the patient first gets up. With the onset of arthritis in either the ankle joint or the intertarsal joints, muscle spasm, pain and swelling occur. The foot soon becomes fixed in the position of valgus (fig. 7) because the weak muscles permit it to slump that way and there is less pain in that position in the acute stage of the disease. Because of the strong pull exerted by the gastrocnemius and by gravity and the weight of the bed clothing, the feet become gradually pulled into a position of plantar flexion or equinus. This deformity is also favored by the position in which the patient walks—usually on the anterior portion of the foot, since the least jar increases the pain. This position of walking, aided by the weakness of the long arch of the foot and the muscle spasm, causes the front arch of the foot to be broken down. At this stage the toes frequently become contracted and fixed in a position of hyperextension at the metatarsophalangeal joints and moderate flexion at the interphalangeal joints (fig. 8). Hallux valgus is often found but is the result of faulty footwear and bad weight bearing and is rarely due to the arthritis primarily. Occasionally bony spurs will occur, particularly on the os calcis, during an arthritis. They usually cause no symptoms and do not require treatment if the weight is borne on the feet properly.

Fig. 7.—Early stage of deformity in arthritis, showing valgus and swelling about the ankles.

When there is arthritis elsewhere in the body, one should see that the weight bearing lines of the feet are good.[10] A line dropped from the anterior superior spine of the ilium should pass through the patella and over the second toe. When there is a sag of the longitudinal or anterior arch, this should be corrected by properly fitting plates supporting these arches. Properly fitting shoes go without question. These should be laced oxfords for both men and women. For men the shoe should have a straight inner line from the arch to beyond the great toe. The shank of the shoe should fit in snugly about the long arch. The shoe should be sufficiently wide so that the toes are not cramped; and it should be at least three-fourths inch longer than the foot in weight bearing. With women's shoes the same qualifications should hold and, in addition, the heel should be fairly broad and low, never more than 1½ inches high.

When arthritis is already present in the feet, no weight bearing should be permitted while the feet are swollen and painful. Much comfort is obtained and deformity prevented by the use of a well fitting plaster boot worn all night but removed part of the day so that physical therapy may be given. The bed clothes should be kept off the feet with a cradle, or by pillows. Walking should be permitted only when the swelling and soreness have subsided and then only with the feet properly supported by foot plates and with properly fitting shoes. When deformity has already occurred, it may be corrected in the milder cases by arch supports and good shoes. Night plasters (fig. 9) holding the foot in a corrected position should be worn and changed as frequently as an improvement in position can be obtained.[11] Manipulations are helpful but only in quiescent arthritis. They are followed by a plaster cast holding the foot in a corrected position for about a week. Weight bearing is also prohibited during this period. Exercises should be given for the foot muscles, particularly for the inverters of the foot and the flexors of the toes,[12] as soon as they do not cause pain. These ought to be continued until the patient is able to stand with good weight bearing lines without undue effort. Various operative procedures are applicable for the correction of most severe deformities, such as those devised by Hoke;[13] but these are necessary only in extreme cases.

Fig. 8.—Advanced deformity of foot, showing rigid valgus, hallux valgus and hyperextended toes.

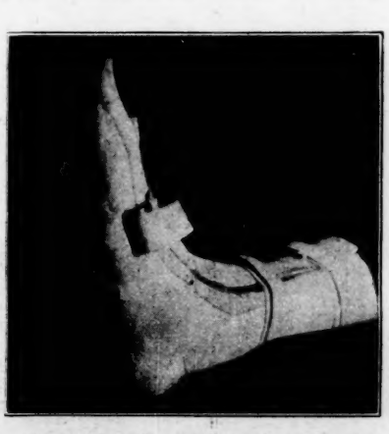


Fig. 9.—Cast for correcting foot deformity. Attention is called to the correction for the longitudinal and anterior arches in the plaster on the sole.

In this series of papers no attempt has been made to differentiate between the various types of arthritis because such differentiation would have led only to confusion. The principles laid down are applicable for all types of chronic arthritis. They have been found efficient and not too laborious in lessening the crippling that results from this dread disease.

Deformities should be anticipated and preventive measures applied early.

372 Marlborough Street.

9. Todd, A. H.: Lancet **1**: 515 (March 18) 1922.
10. Fortin, H. J.: Proc. Staff Meetings, Mayo Clinic **3**: 240 (Aug. 5) 1928.
11. Hohmann, G.: Ztschr. f. orthop. Chir. **50**: 499, 1928.
12. Brown, L. T.: Am. J. Orthop. Surg. **10**: 18 (Aug.) 1912.
13. Hoke, M.: Am. J. Orthop. Surg. **19**: 494 (Oct.) 1921.

# GROSS HEMORRHAGE IN GASTRIC AND DUODENAL ULCER

## AN ANALYSIS OF TWENTY-SEVEN CASES

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PHILADELPHIA

Bleeding in variable amounts occurs in more than 95 per cent of all cases of gastric and duodenal ulcer. Occult blood may be found in the gastric contents, in the feces, or in both. The same thing is true in gross bleeding.

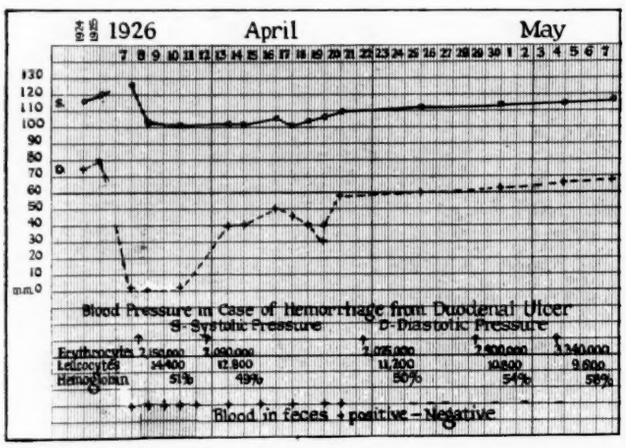


Fig. 1 (case 1).—Record of blood pressure, blood count and occurrence of macroscopic blood in the stools in a case of gross hemorrhage from a duodenal ulcer.

TABLE 1.—*Occurrence of Bleeding Ulcer**

| Case | Age | Sex† | Ulcer | Hematemesis | Melena | Diagnosis: Clinical | Diagnosis: Roentgen | Diagnosis: Operative |
|---|---|---|---|---|---|---|---|---|
| 1 | 19 | ♀ | G | + | — | + | .. | .. |
| 2 | 24 | ♀ | G | + | — | + | .. | .. |
| 3 | 28 | ♀ | D | + | + | + | + | .. |
| 4 | 20 | ♂ | G | + | — | + | .. | .. |
| 5 | 41 | ♂ | D | — | + | + | .. | + |
| 6 | 58 | ♂ | D | — | + | + | + | .. |
| 7 | 21 | ♀ | G | + | — | + | .. | .. |
| 8 | 25 | ♂ | G | + | — | + | .. | .. |
| 9 | 32 | ♂ | G | + | — | + | .. | + |
| 10 | 46 | ♂ | D | — | + | + | + | + |
| 11 | 37 | ♂ | D | — | + | + | + | + |
| 12 | 32 | ♂ | D | — | + | + | .. | .. |
| 13 | 54 | ♂ | D | — | + | + | + | .. |
| 14 | 39 | ♂ | D | — | + | + | + | + |
| 15 | 44 | ♂ | D | — | + | + | + | .. |
| 16 | 36 | ♂ | D | — | + | + | .. | + |
| 17 | 33 | ♀ | D | — | + | + | + | .. |
| 18 | 37 | ♂ | D | — | + | + | + | .. |
| 19 | 21 | ♂ | D | — | + | + | + | .. |
| 20 | 32 | ♂ | D | — | + | + | + | + |
| 21 | 34 | ♂ | D | — | + | + | + | .. |
| 22 | 49 | ♂ | G | + | + | + | + | + |
| 23 | 28 | ♂ | G | + | — | + | + | + |
| 24 | 29 | ♂ | D | — | + | + | + | .. |
| 25 | 33 | ♂ | G | + | + | + | + | + |
| 26 | 42 | ♂ | D | — | + | + | + | .. |
| 27 | 48 | ♂ | G | + | .. | + | .. | + |
| Totals | | | | 11 | 19 | 27 | 17 | 11 |

* In the table + means positive; —, negative; .. , no examination or operation. G is used to indicate gastric ulcer; D, duodenal ulcer. Of the twenty-seven ulcers of both types, ten were gastric and seventeen duodenal. The sex distribution was: gastric ulcer, seven males, three females; duodenal ulcer, fifteen males, two females, or a total proportion for both types of ulcer of twenty-two males to five females.

† In the tables, ♂ indicates male; ♀, female.

Eleven of the twenty-one proved cases of ulcer included in this analysis of twenty-seven cases occurred in a group of 217 patients with proved ulcer, nearly all of whom were ambulant. This is 5.07 per cent, or a ratio of 1 to 19.7. The histories of these patients show clearly that recurrences of symptoms are frequent; that in many instances the patients recover from the attacks without any special medical attention, and that attacks of ulcer symptoms may or may not recur. This course is more often true in cases of duodenal ulcer than it is in cases of gastric ulcer. Duodenal ulcer responds better to treatment than does gastric ulcer. Obstruction is caused more frequently by duodenal ulcer than by gastric ulcer.

According to my observations in this group of cases, the blood is vomited in gastric ulcer and the presence of large amounts of blood in the stools is infrequent. In duodenal ulcer the hemorrhage shows in the stools and it is only rarely that patients vomit blood. Blood in the vomitus is always noted by the patient, but the presence of blood, even in large amounts, in the feces may be entirely overlooked. Hemorrhage occurs into the stomach in gastric and duodenal ulcer without the patients vomiting blood.

Some of these patients with gastric ulcer had only a single large hemorrhage; other patients had several hemorrhages of moderate size. A few patients had recurrent large hemorrhages. In those instances the hemorrhages recurred after intervals of from six months to a year. One patient, a man, aged 54, had a bleeding duodenal ulcer from which he recovered in 1919. He was free from symptoms of ulcer until January, 1929, when he had a recurrent duodenal bleeding ulcer. The patient recovered from the last ulcer after a brief period of treatment, and he has remained free from ulcer symptoms for the past ten months. Roentgen examination appeared to confirm the belief that the ulcer was healed.

Gross bleeding into the intestine from duodenal ulcer may occur as a single large hemorrhage, but what occurs more frequently is a series of hemorrhages extending

Fig. 2 (case 1).—Nonobstructive duodenal ulcer. In the illustrations the arrows point to the ulcer area.

over a period of several days. It is difficult even to approximate the quantity of blood lost in hemorrhage into the intestine. There is usually a mixture of stomach secretion and water in vomited blood, especially when the amount of blood vomited is large. One may occasionally see a patient in whom the quantity of vomited blood is a liter or more. The smaller hemorrhages of from 150 cc. to 300 or even 500 cc. are more often seen. These hemorrhages may recur. Repeated

small hemorrhages may be a menace to the life of the patient. The occurrence of hemorrhage in gastric and duodenal ulcer in patients without a previous history of the disease is not uncommon.

### DIAGNOSIS OF BLEEDING ULCER

The methods employed for the making of the diagnosis are recorded in tables 1 and 2. For practical purposes the history of the patient and the clinical

TABLE 2.—*Diagnosis*

| | Total Cases | Hematemesis | Melena | Hematemesis and Melena | Roentgen Examination | Operation |
|---|---|---|---|---|---|---|
| Gastric ulcer..... | 10 | 10 | 2 | 2 | 3 | 5 |
| Duodenal ulcer..... | 17 | 1 | 17 | 1 | 14 | 6 |
| Totals..... | 27 | 11 | 19 | 3 | 17 | 11 |

examination are of the highest importance, but these procedures must be supported by the positive observations of roentgen examination or operation. A clinical diagnosis alone was made in only six cases; roentgen examination was done in ten; roentgen examination and

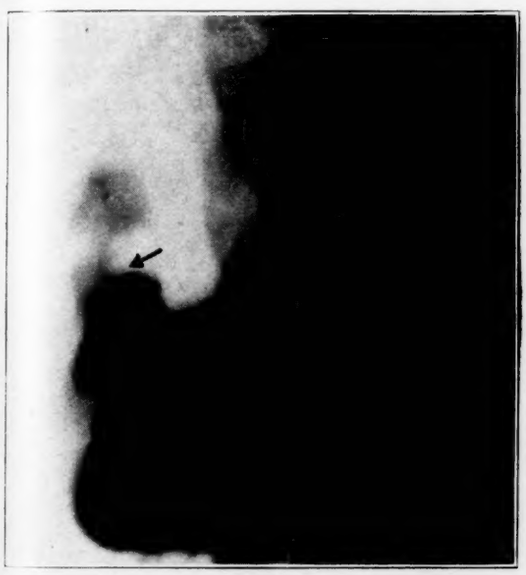

Fig. 3 (case 2).—Duodenal ulcer with a moderate degree of obstruction.

operation in seven, and operation alone in four. The total number of proved cases of ulcer was twenty-one. There were ten cases of gastric ulcer and seventeen cases of duodenal ulcer. Hematemesis was present in the ten cases of gastric ulcer; melena was present in two. Hematemesis and melena were present in two

TABLE 3.—*Cases Treated Surgically*

| | Sex | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Operations | Recurrent Bleeding | Obstruction | Recurrent Bleeding Ulcer | Gastro-Enterostomy | Excision | Mortality |
| Gastric ulcer.... | 5 | 0 | 5 | 3 | 1 | 1 | 4 | 4 | 0 |
| Duodenal ulcer.... | 6 | 0 | 6 | 4 | 2 | 0 | 6 | 0 | 0 |
| Totals. | 11 | 0 | 11 | 7 | 3 | 1 | 10 | 4 | 0 |

cases. Of the seventeen cases of duodenal ulcer, melena was present in all seventeen. Hematemesis was present in one.

Repeated blood counts and the taking of the blood pressure at regular stated intervals, every day if necessary, or every second or third day if conditions are permissible, furnish valuable data as to the course of the disease.

Fig. 4.—Duodenal ulcer with a marked degree of obstruction.

### REPORT OF CASES

By way of illustration I have charted one of these cases in figure 1, which shows the records of the blood pressure and blood count, and the occurrence of macroscopic blood in the stools, in patient 1, who had a bleeding duodenal ulcer (fig. 2).

Fig. 5 (case 3).—Gastric ulcer with almost complete obstruction, for which a gastro-enterostomy was performed.

CASE 1.—A man, aged 34, was seized with what appeared to him, and to his medical attendant, to be an attack of "dysentery." The looseness of his bowels had extended over a period of three days, and the climax was reached when the patient fell in a faint on the bathroom floor of his home. I was called to see him and had him removed to the hospital. It will be observed that the patient had lost practically half of the blood in his body. His condition was grave for several days. The diastolic pressure dropped to 0 mm., where it

remained for four days, during which time the patient showed the most pronounced effects of the bleeding. The diastolic pressure began to rise gradually after the fourth day. On the sixth day the diastolic blood pressure had reached 40 mm. of mercury. The ninth day showed the diastolic pressure at 50 mm., which was again followed by bleeding and a drop in diastolic pressure to 30 mm. by the twelfth day. Gross bleeding stopped suddenly at that point, the diastolic pressure rose from 30 mm. to 60 mm., and macroscopic blood disappeared from the stools. The blood count and the macroscopic blood in the stools ran parallel with the diastolic blood pressure in this case. Toward the end of the patient's stay in the hospital the red blood cells increased, the number of leukocytes diminished, and the hemoglobin increased. The patient has remained well and free from ulcer symptoms since that time, the summer of 1926.

TABLE 4.—*Summary of Cases of Bleeding Ulcer*

| Diagnosis of Proved Ulcer | Number of Cases | Per Cent |
|---|---|---|
| Roentgen examination alone | 10 | |
| Roentgen examination and operation | 7 | |
| Operation alone | 4 | |
| Total | 21 | |
| Cases treated medically throughout | 16 | 59.2 |
| Recurrent bleeding duodenal ulcer after lapse of ten years | 1 | 3.7 |
| Moderate degree of stenosis which cleared up under treatment | 2 | 7.4 |
| Cases treated surgically | | |
| Recurrent bleeding | 7 | 25.9 |
| Recurrent gastric ulcer, bleeding | 1 | 3.7 |
| Obstruction, one gastric, two duodenal | 3 | 11.1 |
| Total | 11 | 40.7 |
| Mortality | 0 | 0.0 |

The blood pressure and the blood count will naturally vary according to each individual case.

A swelling due to inflammatory exudate about the ulcer may be present in some instances and cause some obstruction, as shown in case 2:

CASE 2.—A woman, aged 28, with a bleeding duodenal ulcer (fig. 3) had an obstruction of moderate degree in which there was a twenty-four hour gastric retention. Spinach and other articles of food that had been eaten twenty-four hours previously were obtained on aspiration of the stomach contents. It was thought at first that an operation would be necessary. The condition cleared up under medical treatment and the patient has been free from ulcer symptoms since that time, 1918.

Case 3 is cited as an example of remote hemorrhage following operation for a bleeding gastric ulcer:

CASE 3.—A man, aged 28, who had a bleeding ulcer of the pylorus with almost complete obstruction, was operated on by me, Jan. 24, 1927. A posterior gastro-enterostomy was performed. There had been bleeding in amounts of from 150 to 250 cc., at different times over the preceding three years. The patient was completely relieved following the operation.

I was called suddenly to see him at midnight, Nov. 15, 1927. Late that night the patient had vomited nearly a liter of blood. There had not been any symptoms of recurrent ulcer. The thought occurred to me that the patient had possibly an obstruction, angulation or twist of the jejunum. I had him removed immediately to the hospital and roentgen examination was made (fig. 5). It did not show anything that would account for the hemorrhage. The condition of the gastro-enterostomy anastomosis and of the intestine appeared to be good. The patient returned to his home after a stay of ten days in the hospital and he has remained well and free from stomach symptoms since that time.

Case 4 is an instance of recurrent bleeding ulcer of the lesser curvature of the stomach, two years after operation for a bleeding ulcer of the pylorus in which perforation had taken place:

CASE 4.—A man, aged 33, had been operated on for a perforated gastric ulcer near the pylorus, in 1926, in a hospital in another state. The perforation was closed and a posterior gastro-enterostomy performed. The patient remained well until the spring of 1928. On examining him about the middle of June of that year, I found that he had a recurrent bleeding ulcer of the lesser curvature of the stomach. I excised the ulcer at operation, June 22. The patient has remained free from stomach or ulcer symptoms since that time.

Operation was not performed in any instance for acute hemorrhage, or for the first hemorrhage.

1829 Pine Street.

## PRODUCTION OF ASEPTIC URETERO-ENTEROSTOMY

### BY A SUTURE TRANSFIXING THE URETERAL WALL AND THE INTESTINAL MUCOSA

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At a clinical meeting of the Pacific Coast Surgical Association held at the University of California Hospital in February, 1926, I showed a specimen of a dilated ureter and hydronephrotic kidney which had resulted from transfixing a dog's ureter and intestinal mucosa while an anchor suture was being placed in the course of a ureteral transplantation operation. The suture had cut the lumens of the viscera together and a permanent fistula had resulted. Being proximal to the valve, the fistula had short-circuited and nullified the valve.

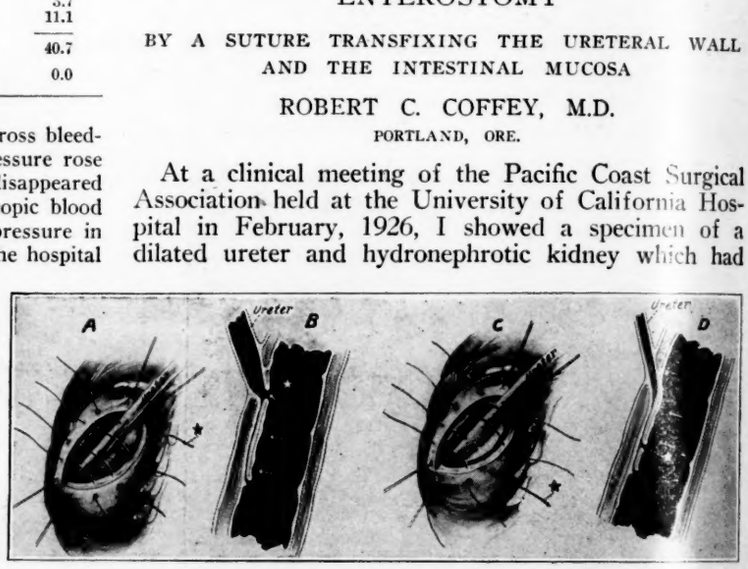


Fig. 1.—Incidents that lead to the development of the transfixion suture technic: *A*, proximal anchor suture in a ureteral transplantation operation has transfixed the ureter and intestinal mucosa and included both in its bite; *B*, fistula produced by the proximal transfixion suture in *A* by which the valve was short-circuited; *C*, suture near distal end of incision transfixes ureter and intestinal mucosa; *D*, fistula results, but proximal mucous membrane maintains the valve action.

In another case, the transfixing suture which had produced a fistula had been near the distal end of the incision. No harm had resulted because there was sufficient membrane proximal to the fistula to form an efficient valve (fig. 1). The point of interest in these two specimens at that time was the effect of short-circuiting the valve.

A few months ago when I was casting about for a method of making a simpler anastomosis, these specimens came to mind and suggested a query as to what length of time would be required for a transfixion suture of this kind to cut through and make a fistula. Experiments soon showed that the fistula developed very rapidly. A preliminary report was published recently.[1]

1. Coffey, R. C.: Experimental Transplantation of Ureter in Which a Transfixion Suture is Used to Complete the Anastomosis, Northwest Med. **29**: 128 (March) 1930.

TECHNIC

The technic shown in figure 2 was devised and experiments were begun. The steps of the operation are as follows:

The ureter is mobilized in the usual manner and cut between forceps. The distal end is ligated with catgut and dropped back. The proximal end is lifted in the forceps. A curved needle carrying 00 chromic catgut doubled transfixes the ureter just above the forceps. The loose end of the suture is left long and tied both ways around the ureter. An incision is then made in the intestinal wall about 1½ inches long beginning near the mesenteric border and extending inward and downward toward the antimesenteric border. This may be done with or without traction loops, such as are shown in the pictures. The importance of properly making the incision is often underestimated. It should be made with a sharp knife which has a very sharp point. The cut is made through the peritoneum and partially through the muscle with the edge of the knife. The point of the knife is then turned flatwise. By the strokes of the flat side of the knife point, the muscle fibers gradually give way by teasing and the muscle edges separate. In this way, the danger of opening the mucosa and producing hemorrhage is lessened. The curved needle carrying the catgut which is attached to the ureter passes between the cut muscular coat and the mucosa from within outward through the peritoneum and back through the peritoneum between the muscle and the mucosa on the other side. By using the loose end of the suture, one may draw the ligated end of the ureter into the angle of the wound between the mucosa and the muscle. This firmly anchors the ureter. About a quarter of an inch proximal to the ligature, the ureter is taken between the fingers and carefully isolated. Its surface vessels are isolated and avoided. A fine straight needle carrying a strong fine linen or silk thread doubled is now used to transfix the ureter in such a way as to include at least half its circumference. The needle then picks up the loose mucosa and includes at least a quarter of an inch of the full thickness of the mucous membrane. Care must be used that this suture passes well into the lumen of the intestine. This suture is tied tightly so as completely to strangulate the tissues within its bite. With the catgut which has been used for anchoring the end of the ureter, the wound in the intestine is closed over the ureter with a continuous suture. A few interrupted sutures of fine linen or silk, or even catgut, may be used as reinforcement sutures. After the wound in the intestine is closed, not too tightly, around the ureter, the peritoneal edge forming the outer margin of the incision from which the ureter has been lifted is drawn across and sutured so as to cover the ureter entirely. The suture continues downward until the slit in the peritoneum is closed.

The actual operation of implanting the ureter into the intestine takes less than fifteen minutes. As the bowel is not opened, the operation may be entirely aseptic, as is proved by the fact that in the seven single ureters transplanted at seven operations there has been no evidence of adhesions or peritoneal infection in the neighborhood of the intestinal wound. The urine has appeared in the rectum at periods varying from twenty-four to forty-eight hours.

The dog in which the first (left) ureter was first transplanted after this technic was definitely established passed urine from the bowel in about thirty-six hours. He was ready to play and retrieve objects thrown out into the yard on the third day. Three weeks after the first operation, he was brought in and the abdomen was again opened through the right rectus muscle. The left kidney was examined and found to be normal as far as could be determined. The ureter was not dilated. There were no adhesions in the neighborhood of the former transplantation. The right ureter was then transplanted in the same way. On the second day after the second operation, he was ready to play and to retrieve a ball thrown out into the lawn. Recovery was uneventful. The second dog was treated in the same way, but after the second operation he was taken across the city in a cold car and put in a cold room, where he developed pneumonia and died in the course of a week. Postmortem revealed the kidneys in perfect condition. Both were emptying perfectly into the intestine, as shown by the specimen in figure 3. Another dog was killed at the end of a week with chloroform to get the specimen and to see the result at this time. The result was exactly the same as shown in figure 3, right ureter. The fourth dog had the two ureters trans-

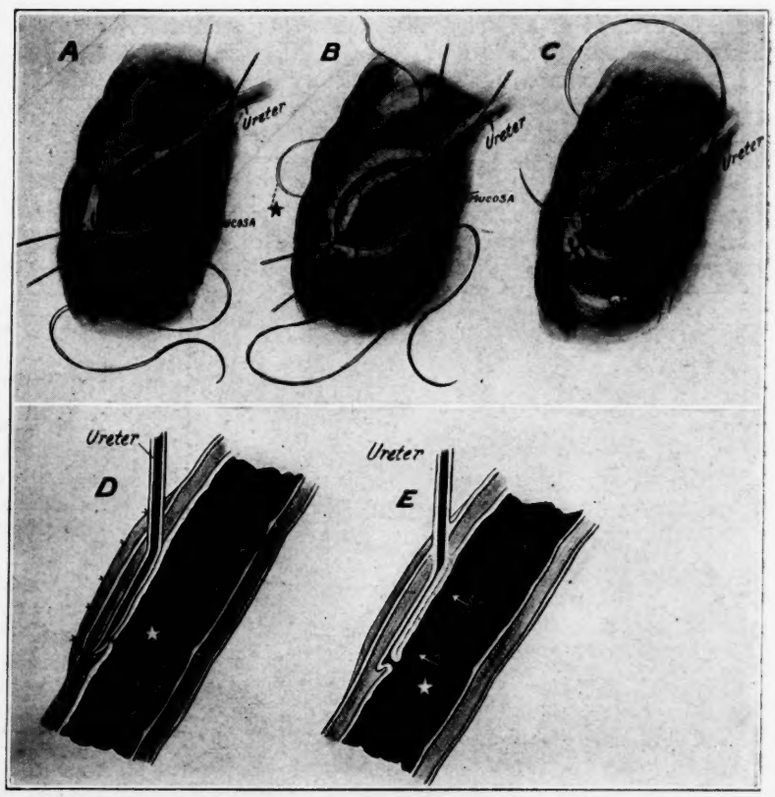


Fig. 2.—Uretero-enterostomy by the transfixion suture technic: *A*, after an incision about 1½ inches long has been made through the peritoneal and muscular coats and the mucous membrane has been mobilized, the end of the ureter, which has been transfixed and ligated by 00 chromic catgut doubled, is anchored into the lower end of the incision. The main ureteral artery should be avoided. *B*, a small straight needle armed with strong fine linen or silk thread transfixes the ureter so as to include at least half its lumen and a quarter inch bite of the full thickness of the mucous membrane of the bowel. *C*, transfixion suture is tied and peritoneal and muscular coats are being closed over the ureter with the original anchor suture. *D*, suture is shown transfixing the ureteral wall and intestinal mucosa. *E*, the sloughing transfixion suture has left a permanent fistula. The arrows indicate intra-intestinal pressure closing the valve. In all pictures, the star indicates a transfixion suture or its resultant opening.

planted in the same way and at the same intervals as the first dog with similar results. Both these dogs are in perfect health and have license collars and will be kept to determine the final results.

### COMPARATIVE IMPORTANCE OF THIS PLAN IN THE SCHEME OF SUBMUCOUS TRANSPLANTATION OF URETERS

During the twenty years that I have been studying implantation of the ureters, I have developed three plans (fig. 4):

In plan A, which was the first to be described,[2] the immediate operative results on dogs were bad. The best series I had was the one reported in which four of the nine dogs died and five recovered after a stormy convalescence. But after recovery the valves were perfect, the ureters undilated and the kidneys uninjured. According to the best information I can get, this plan of operation has been used in approximately 200 clinical cases by many operators. Official or unofficial reports indicate that the operative mortality has been 25 per cent or more. Of the 200, nearly one third of the operations were performed by Dr. Charles H. Mayo, who was able to reduce the mortality to about 16 per cent by the skill acquired from his large experience. Nearly all patients who recover, however, have a stormy convalescence, because of local infection entering the intestinal wound by the opening in the mucosa through which the ureter has been drawn. In

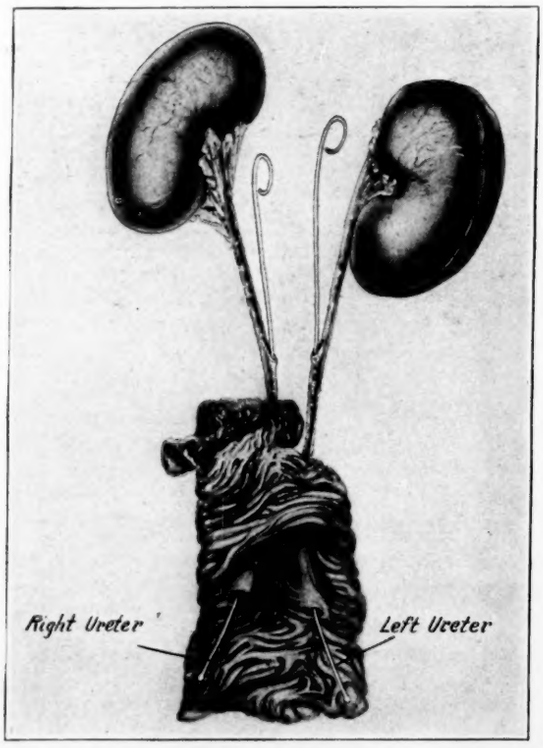


Fig. 3.—Specimen showing result of transplanting ureters by transfixion suture technic. The right transplantation is 1 week old, the left, 4 weeks old.

those recovering from the operation, the kidneys were well protected by the valve formed. This plan cannot be used for bilateral transplantation.

In plan B, the technic is very exacting, but it is far less dangerous than plan A. By this plan, the two ureters are transplanted at the same sitting; a dilated ureter due to destructive cancer may be transplanted; no infection can possibly enter the ureter or kidney until after the ureteral ends have sloughed away; the sepsis around the ureters in the intestinal wall is much less than in plan A and the postoperative reaction and immediate mortality are much less than with plan A. After recovery, the valve action is just as good. Plan B includes such an extensive and exacting technic that

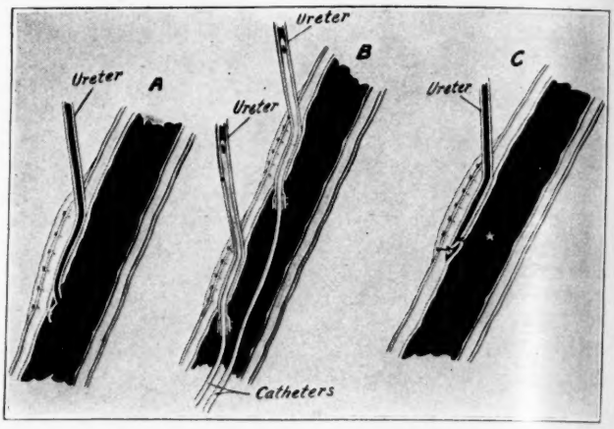


Fig. 4.—Three plans for submucous transplantation of the ureters: *A*, ureter drawn through a hole in the mucous membrane and anchored inside the intestine. The end of the ureter is open and exposed to intestinal infection. The intestinal wound is also exposed through the opening in the mucous membrane. *B*, bilateral submucous transplantation by the tube technic. Ureters and catheters are entirely closed to infection, but the intestinal wound is exposed through the opening in the mucous membrane. *C*, transfixion suture technic. The intestinal mucosa is not opened and the intestinal wound not exposed to intestinal infection. By the time infection has had time to follow the suture outward, protection has been established which has localized the infection.

it is practically impossible to use it on dogs. The mortality during my own experiments on dogs was high by this technic. The reason the mortality is so much higher in operations on dogs than on the human being by plan A or plan B appears to be that the dog's intestinal bacteria are more virulent in proportion to his resistance than those of man. In these procedures which open the intestinal lumen, the intestinal wound becomes infected and many dogs will die following operations by either of these methods.

In plan C, now under consideration, the lumen of the bowel is not opened. Therefore, no infection takes place in the bowel wall. The transfixion suture seems to localize the infection. It has the advantage of being much simpler of performance than either of the other operations, and is followed by no local intraperitoneal infection and by much less clinical reaction than any other method I have tried. This plan, like plan A, is not practical for the transplantation of the two ureters at the same time. If the late results of this plan are as good proportionately as the early results, it may prove to be important. It is of course possible that the fistula may later close. Therefore much more experimental work must be done before this plan can be recommended as a clinical procedure.

611 Lovejoy Street.

2. Coffey, R. C.: Pancreato-Enterostomy and Pancreatectomy, Ann. Surg., December, 1909; Physiologic Implantation of the Severed Ureter or Common Bile Duct into the Intestine, J. A. M. A. **56**: 397 (Feb. 11) 1911.

**Need in Child Training.**—Getting a clear view of a healthy-minded boy and girl—the kind that parents and teachers want to make—is the first need in child training. Then one is prepared to notice deviations from what is called the "normal." But it is the causes of these variations rather than the changes themselves that are important. The behavior that makes the child a problem is merely a symptom of what is going on inside. —Swift, Edgar J.: The Psychology of Childhood, D. Appleton & Co., page 48.

# METHYL SALICYLATE POISONING IN INFANCY

## NECROPSY OBSERVATIONS *

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Methyl salicylate poisoning in infancy is a comparatively rare occurrence. A review of the American literature from the case reported by Gallaher [1] in 1852 to those reported by Olmsted and Aldrich [2] in 1928 reveals a total of eighteen cases, this total including cases in infancy, childhood and adult life. Some of these cases will be quoted in part to point out observations similar to those that I have made.

### AMOUNT INGESTED

The amount of methyl salicylate swallowed in the fatal cases reported occurring in infancy and childhood varied from 10 to 12 cc. In contrast to this, Meyers [3] in 1920 reported a case occurring in a child, aged 2 years, who swallowed 30 cc. and recovered.

### TOXICITY

Wetzel and Nourse [4] call attention to the intimate relation of the salicylates to the phenols. Of the salicylates, the methyl ester is the most respected; therefore the sodium salt is the more commonly used. According to Hanzlik and Wetzel [5] the toxicity is said to be due to the greater lipoidal solubility of methyl salicylate and to the fact that it suffers less destruction within the body after absorption.

### SYMPTOMATOLOGY AND PHYSICAL OBSERVATIONS

The symptomatology and physical observations in these cases are similar in many respects. Some of the cases presented few if any symptoms. Woodbury and Nicholls [6] report two cases; in one case the only symptom was vomiting; in the other case vomiting and convulsions were noted. Persistent vomiting was the only early symptom in my case. Wetzel and Nourse [4] described dilatation of the pupils, which became contracted and again dilated with the development of sudden pulmonary edema and death thirty-six hours after ingestion. In my case the pupils were contracted at first, later becoming slightly dilated. Death likewise followed the development of sudden pulmonary edema and respiratory failure. In the case reported by Meyers [3] in which recovery followed the ingestion of 30 cc., he states that at the end of forty hours the child appeared normal. This was followed by dyspnea and the cessation of voluntary respirations, which was overcome by artificial respiration. Wood and Hare [7] in 1886 described experiments in dogs, which developed convulsions and rapid deep respirations with respiratory failure, followed by death. In these cases depression or failure of respiration seems to be an important factor.

### REPORT OF CASE

*History.*—W. A. K., a boy, aged 22 months, admitted to the Jewish Hospital, Oct. 8, 1929, had swallowed approximately 24 cc. of synthetic methyl salicylate the day before, with continuous vomiting since. The mother gave the child egg white, and a druggist who was consulted said that everything was all right because of the vomiting. The child vomited several times in the hospital and was quite thirsty.

*Physical Examination.*—The pupils at the first examination were equal and contracted, later becoming slightly dilated and reacting sluggishly to light. The lips were dry and slightly cyanosed. The pharynx and tonsils were congested. There was a strong odor of wintergreen to the breath.

Respirations were rapid and somewhat labored, with playing of the nasal alae, and an expiratory grunt was present. There was slight impairment of the percussion note at the right apex anteriorly and posteriorly, extending to about the third rib. Auscultation revealed bronchial breathing over this area with harsh crepitations. Marked rhonchial fremitus was present here.

The abdomen was tense and markedly distended. Peristalsis, while audible, was infrequent. The extremities were cold and slightly cyanotic. All the reflexes were diminished. There were no Brudzinski, Babinski or Kernig signs or ankle clonus. The temperature was 100 F., the pulse rate 160, and respirations 40; the temperature rose to 101, the pulse to 180, and respirations to 50.

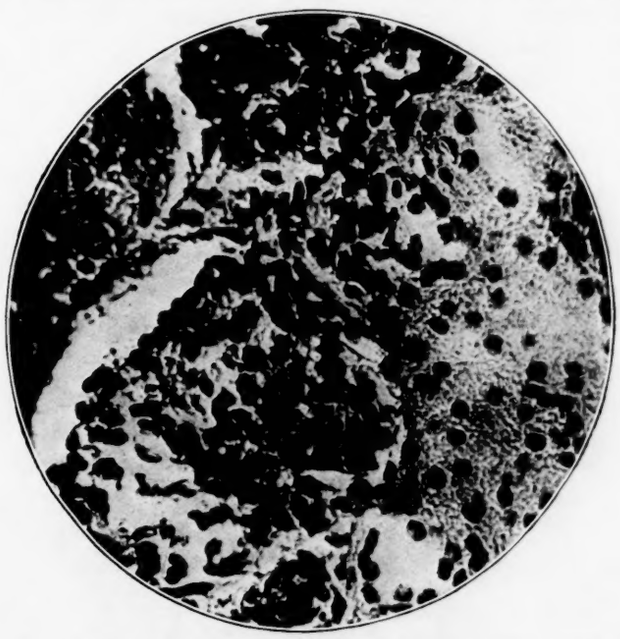

Fig. 1.—Section of the kidney. The lower left corner shows congestion and edema of the tuft with cellular hyperplasia and a layer of fibrin on the capsule. On the right side is shown disintegration of the tubule with broken cells.

*Treatment.*—This consisted of magnesium sulphate, 1 fluidounce (30 cc.), atropine sulphate, 1/500 grain, atropine sulphate, 1/600 grain, and caffeine sodiobenzoate, 1/8 grain (8 mg.). Gastric lavage was done with 2 per cent sodium bicarbonate solution. Fluids and fruit juices with sodium bicarbonate were pushed orally. Sodium bicarbonate likewise was given into the colon. The colonic fluid returned bloody. External heat was applied and the child was placed in an oxygen tent. The child became extremely cyanosed and suddenly developed pulmonary edema. One ampule of caffeine sodiobenzoate was injected into the heart and artificial respiration was attempted, but the child died.

*Laboratory Observations.*—A blood count showed hemoglobin, 63 per cent; red cells, 4,900,000; white cells, 10,300; neutrophils, 44 per cent; lymphocytes, 53 per cent; transitionals, 2 per cent, and basophils, 1 per cent. The feces were positive for bile. The fluid from colonic irrigation had an odor of methyl salicylate and gave a positive salicylate reaction when

* From the Pediatric Service of the Jewish Hospital.
* Read before the Philadelphia Pediatric Society, Feb. 11, 1930.

1. Gallaher, T. J.: Case of Poisoning by Oleum Gaultheriae, Philadelphia M. Examiner **16:** 347-350 (June) 1852.
2. Olmsted, J. G. M., and Aldrich, C. A.: Acidosis in Methyl Salicylate Poisoning: Report of Two Cases and a Review of the Literature, J. A. M. A. **90:** 1438-1440 (May 5) 1928.
3. Meyers, H. B.: A Case of Methyl Salicylate Poisoning, J. A. M. A. **75:** 1783 (Dec. 25) 1920.
4. Wetzel, N. C., and Nourse, J. D.: Wintergreen Poisoning, Arch. Path. & Lab. Med. **1:** 182-188 (Feb.) 1926.
5. Hanzlik, P. J., and Wetzel, N. C.: The Excretion of Salicyl After the Administration of Methyl Salicylate to Animals, J. Pharmacol. & Exper. Therap. **14:** 43, 1920.
6. Woodbury, F. V., and Nicholls, A. G.: Two Fatal Cases of Methyl Salicylate Poisoning, Canad. M. A. J. **18:** 167-169 (Feb.) 1928.
7. Wood, H. C., and Hare, H. A.: The Oil of Gaultheria, Therap. Gaz. **10:** 73 (Feb. 15) 1886.

tested with ferric chloride. This fluid was also strongly positive for blood. About 2 cc. of urine taken post mortem gave a negative ferric chloride reaction, possibly because kidney function had almost ceased.

*Autopsy.*—The body was well developed; nutrition had been good, and the contours of the face, neck and trunk were normal.

Fig. 2.—Section of the liver. Well marked cloudy swelling and fatty degeneration are seen with a bionecrosis of the liver cells. Degeneration of the nuclei is apparent throughout the section. The gland structure is not seen on account of the cloudy swelling.

Internal examination showed no peritoneal involvement. The stomach was markedly dilated. There was no pleural effusion.

There was terminal dilatation of the heart; examination otherwise was negative.

Both lungs exhibited a considerable congestion which in some areas, although not a true consolidation, may have been the early congestive phase of alveolar inflammation. This was most marked in the right upper lobe. The bronchi of both lungs were moderately injected. The lymph nodes were moderately enlarged and firm.

The capsule of the spleen was normal, and the organ was of normal size. On section, a reddish surface, firm, and showing follicular hyperplasia, was noted.

Both kidneys were of normal size and consistency. On cut section, a patchy congestion of the cortical tissue was noted; otherwise no gross pathologic change was seen.

The urinary bladder was practically empty. About 2 cc. of cloudy urine was recovered for chemical examination.

The liver was slightly enlarged, with a smooth, pale yellowish brown surface with rounded edges. Section showed a marked parenchymatous degeneration with early diffuse fatty change. The gallbladder and bile ducts were normal.

The stomach was considerably dilated and filled with a large amount of curd. The mucosa was edematous. A few areas of active hyperemia were seen, but no erosion.

The duodenum grossly was normal. The rest of the small intestine showed irregular areas of mucosal congestion. There was a marked hyperplasia of the lymphoid tissue, seen first as small, scattered, white nodules which increased in number nearer the ileum and in the cecum and colon were so numerous as to give a uniform hobnailed appearance to the mucosa of the entire large intestine. Peyer's patches were likewise very prominent. The appendix showed no definite change. The mesentery exhibited a diffuse lymphadenopathy. No caseation was seen.

The upper portion of the small intestine contained a great deal of clear fluid. In the ileum and in the cecum were collections of fecal matter, which definitely conveyed the characteristic odor of methyl salicylate.

The pathologic diagnosis was terminal dilatation of the heart; acute congestion of the lungs, with possible early pneumonia; follicular hyperplasia of the spleen; congestion of the kidneys; cloudy swelling and fatty degeneration of the liver; dilatation of the stomach, with edema of the mucosa and mild congestion, and marked hyperplasia of all lymphoid structures in the intestinal tract with the presence of methyl salicylate in the fecal contents.

*Microscopic Examination.*—The capsules of the kidneys were normal. The glomeruli were mostly all enlarged; they all appeared to be congested, a few of them so much so as to fill up the capsular spaces. A few red blood cells and fibrin were free in the capsular spaces. There was no exudative lesion. The tubules, especially the large proximal convoluted structures, showed marked degeneration with swelling, disintegration and fading of the nuclei. There were several containing broken-down débris. In some places the cloudy swelling was so marked that the intertubular structures were hard to make out. There was no interstitial exudate. All the blood vessels were congested.

The liver presented a marked cloudy swelling to the degree that most cellular structures and boundaries were obscured. In certain areas where the staining was poor, one noted marked cellular degeneration, mostly fatty. The bile ducts were normal. The blood vessels contained very little blood, because of the marked swelling. The nuclei varied in staining quality. Many showed various types of nuclear degeneration. Another section showed the fatty degeneration to be even more marked.

The mucosa of the ileum was intact, but considerable catarrhal (goblet cell) distention and degeneration of the glands of Lieberkühn were noted. There were large lymphoid collections in the submucosa which were very edematous. They were made up mostly of small and large lymphocytes and plasmocytes. Other types of cells were not seen. There was a marked edema of the submucosa. The muscularis appeared normal.

The chief changes were great congestion and edema of the mesenteric lymph nodes. All the sinuses were extremely dilated and filled with blood and the pulp tissue was widely distended, so that the original cellular structure appeared scanty. No definite necrosis was seen. The general centers shared in the marked edema.

Fig. 3.—Section of the ileum, showing edema of the mucosa and submucosa. There is marked goblet cell distention and destruction of the glands of Lieberkühn.

The microscopic diagnosis was early glomerular nephritis; cloudy swelling and fatty degeneration of the liver; congestion, edema, mucoid degeneration, lymphoiditis and hyperplasia of the ileum, and lymphoid hyperplasia of the mesenteric lymph nodes.

### PATHOLOGY

While only some of the cases reported were studied at necropsy, the pathologic condition described seems to show certain changes which are much alike in each case and also like those in my case. Woodbury and Nicholls [6] in 1928 described an acute degenerative parenchymatous nephritis, an acute gastritis, congestion and edema of the lungs and multiple small hemorrhages in the pericardial, pleural and subdural spaces. Legrain and Badonnel [8] in 1922 described liver and kidney insufficiency. Gallaher [1] in 1852 referred to Beck's Medical Jurisprudence, noting particularly the presence of gastric inflammation. Wetzel and Nourse [4] in 1926 noted hemorrhagic areas in the pleura, lung and epicardium; fatty changes and cloudy swelling of the liver; lymphatic hyperplasia of the follicles in the ileum and to a slight degree in the colon; a cloudy swelling and hyperemia of the kidney parenchyma and a hyperplasia of the splenic pulp and lymph nodes.

### SUMMARY

1. Ten cubic centimeters of methyl salicylate has been known to cause fatal poisoning.
2. Vomiting is frequently the only early symptom.
3. Sudden depression or failure of respiration is encountered.
4. The pathologic changes are much alike in these cases, particularly those of the liver, kidney, intestinal tract, lung, splenic pulp and lymph nodes, and the stomach.
5. Methyl salicylate should be dispensed only with proper warning as to the possible danger of internal administration.

1727 North Sixteenth Street.

8. Legrain and Badonnel: A Case of Poisoning with Methyl Salicylate, Paris letter, J. A. M. A. **78**: 1140 (April 15) 1922.

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## URINARY CALCULI IN INFANCY AND CHILDHOOD *

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NEW YORK

Because persistent pyuria is the outstanding symptom when urinary stone is present in infants and children, chronic pyelitis is the usual diagnosis; the time honored urinary antiseptics are administered; the disease progresses. While it has been my good fortune to collect for study from one institution a series of thirty juvenile cases of urinary calculi, my purpose here is not only to present a clinical summary of this group but also and more particularly to emphasize that (1) chronic pyuria rarely means uncomplicated renal infection, and (2) pyuria that still persists after four weeks of intensive medical treatment clearly warrants a complete urologic examination. Failure to subject patients with chronic pyuria to complete urologic examination (or even to a plain roentgenogram of the urinary tract) accounts for the rarity with which, in the past, urinary stones have been disclosed during the early years of life.

### INCIDENCE AND ETIOLOGY

The incidence of urinary stone shows a striking geographic variance. In India and Asia Minor, calculi are extremely common, one Indian surgeon reporting the observation of more than 10,000 cases in childhood. In the United States and on the continent, stones are much more rarely found in children. The 203 cases collected by Thomas and Tanner [1] through a questionnaire sent to a number of urologists is the largest American series reported to date and may be taken as a fair index of the relative infrequency with which urinary stone has been recognized in the past. It should be noted, however, that, since that publication (1922), wider application of urologic methods of diagnosis to children has resulted in the discovery of a vast number of additional instances.

Of the thirty cases of stone here reported, seventeen were disclosed in an autopsy study of 2,420 infants and children, an incidence of 0.6 per cent. Although of at least potential clinical importance, in autopsies those stones having a diameter of less than 3 mm. have been disregarded. I have observed experimentally that only with considerable difficulty can stones of this size be made to pass the ureter of a 1 year old child. This, however, is probably not a fair criterion, for at autopsy I have seen the renal pelvis thoroughly obstructed by an even smaller stone jammed in the ureteropelvic junction. In all but three of the remaining thirteen cases of this series, removal of the offending stone was carried out. In two instances, consent for operation was refused; one of these patients, a boy, aged 2 years, with a large vesical calculus complicated by a diverticulum, died in uremia four months later. In the third, immediate nephrectomy for acute pyonephrosis was performed in an extremely ill 5 year old boy. At the

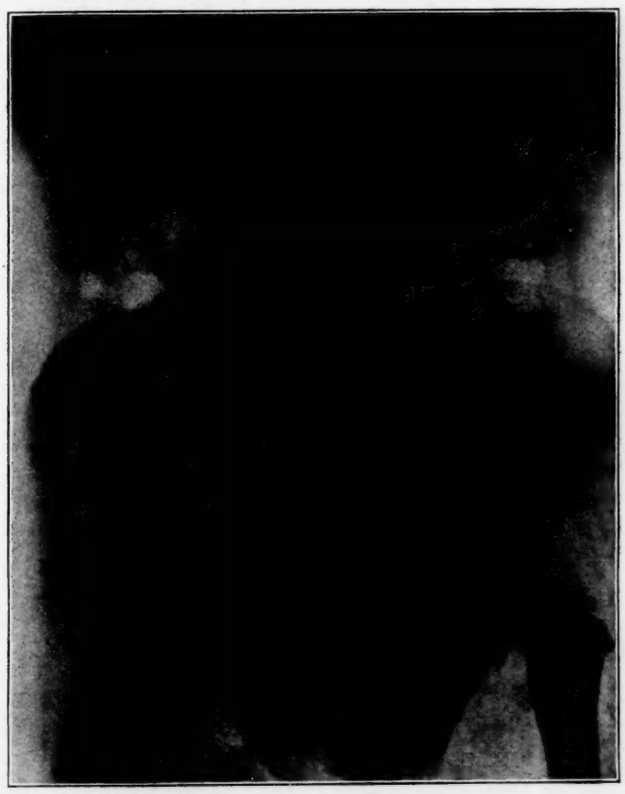

Fig. 1.—Stone in lower ureter of 5 year old boy. No urinary symptoms were present until the occurrence of a brisk painless hematuria one week before examination. The spacious dilatation of the upper ureter is indicated by the doubled up catheter; pyelography revealed a greatly dilated ureter with moderate hydronephrosis. The pinhole size orifice of a large ureterocele on this side prevented expulsion of the stone.

* Read before the Section on Pediatrics, New York Academy of Medicine, Jan. 9, 1930.

* From the Children's Medical and Surgical Divisions, the Departments of Pathology and Urology, Bellevue Hospital.

1. Thomas, G. J., and Tanner, C. O.: Urinary Lithiasis in Children, J. Urol. **8**: 171 (Aug.) 1922.

time of operation, the condition of the patient did not justify exploration of the ureter near the bladder to recover the impacted stone (fig. 1).

The formation of urinary stones is still an unanswered problem in physical chemistry. Colloidal precipitation about a central nidus of bacteria or cellular débris is the usual explanation. Stone formation without infection is indeed rare and it is seldom encountered without urinary stasis. Of little clinical importance are the small uric acid crystalline concretions so commonly found in the renal pelves of the new-born and very young; certainly most of these are passed before many months of life. It is probable, however, that some of these may become nuclei for larger stones. The stones of later childhood are nearly all of urate or calcium phosphatic composition; from 10 to 15 per cent are composed of uric acid. In my cases (including those seen at autopsy) uric acid stones and phosphatic stones were found in equal proportion; in two cases the character was not recorded. The number of stones found in individual cases varied from one to twenty.

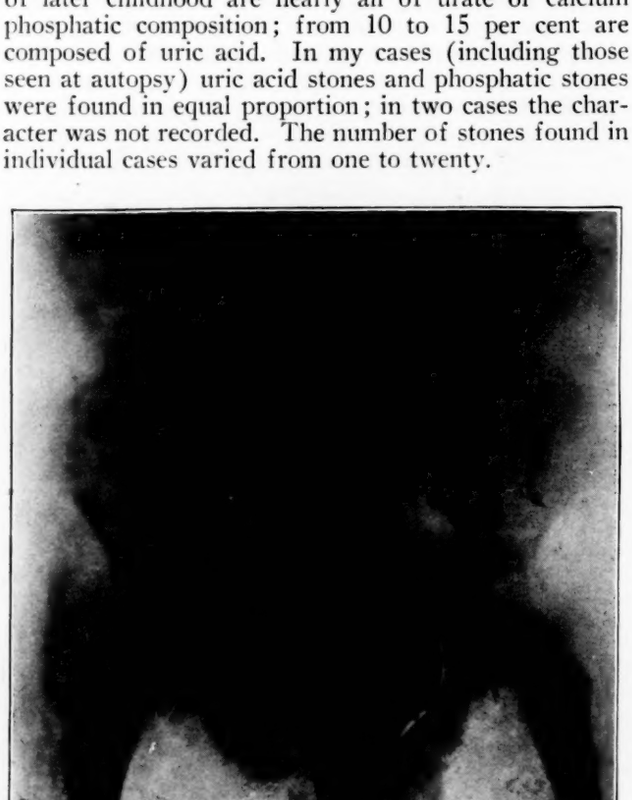

Fig. 2.—Stone in diverticulum of bladder dome associated with congenital fibrotic obstruction of the vesical outlet. The patient was a boy, aged 2 years, and had been treated since early infancy for "cystitis." The chief symptoms were marked pyuria, frequency, dysuria and occasional hematuria. Consent to operation was refused. The patient died in uremia four months later.

Urinary calculi may appear at any age; they have been found in a six and in an eight month fetus.[2] The ages of the patients in my series are shown in table 1.

TABLE 1.—*Age of Patients*

| | Autopsy | Clinical |
|---|---|---|
| Under 6 months | .. | .. |
| From 6 to 12 months | 11 | .. |
| From 13 to 24 months | 6 | 1 |
| From 2 to 4 years | .. | 2 |
| From 5 to 10 years | .. | 8 |
| From 11 to 15 years | .. | 2 |

In the cases of Thomas and Tanner the average age was 7.8 years; in our clinical cases the average age was 8 years, the youngest patient being a girl, aged 19 months, from whose ureter two uric acid stones were passed following ureteral dilation. A small bladder stone was also present. The average age of the children examined at autopsy was 9.8 months.

A study of reported cases indicates that urinary stone is predominantly a disease of boys; in a series of 2,000 collected cases cited by Hyman,[3] there were only seventy-seven girls. My cases were equally divided.

TABLE 2.—*Location of Stone*

| | |
|---|---|
| Kidney pelvis | 19 |
| Calix | 3 |
| Ureter | 4 |
| Bladder | 4 |
| Ureter and pelvis | 2 |
| Ureter and bladder | 1 |

Others have noted no apparent preference for either the right or the left side, although in my cases the ratio was 17 right to 7 left. In about 10 per cent the involvement is bilateral, as I have twice observed. According to the reports of others, more stones are found in the bladder than elsewhere; I found only five, or 15 per cent (table 2). Since 90 per cent of all stones leave the kidney and few lodge in the ureter, the remainder of the migrating calculi are either passed from the meatus or reside in the urethra or, having encountered obstruction at the vesical outlet, remain in the bladder, where they rapidly grow by accretion to considerable size. Clinical observations show that stones encounter the greatest obstacle to their passage at the vesical outlet. Unquestionably this is the explanation of the high male sex incidence. While urethral stones have been noted frequently by others, I have never seen the condition in infancy or early childhood.[4] According to the literature, children have been observed who had renal, ureteral, vesical and urethral stones simultaneously.

## PATHOLOGY

The more important pathologic changes in the urinary tract accompanying or resulting from stone are pyelonephritis, hydronephrosis or pyonephrosis, ureterectasis with or without stricture, vesical dilatation, trabeculation or diverticulosis. Three cases in my series were complicated by diverticula. If the urethra is blocked, secondary back pressure changes occur behind the obstruction. When stone is present, definite mural obstruction is usually demonstrable at some point along the course of the urinary tract. In three instances in my clinical group, ureteral blockage by atresia was noted; in one of these a ureterocele with a pinhole size orifice prevented stone expulsion. In another case showing a different type of obstruction, congenital vesical outlet fibrosis withheld the stone in the bladder (fig. 3).

## SYMPTOMS

The symptoms of stone are predominantly those of urinary tract infection although pain, whether due to urinary obstruction or to the presence of the foreign body, may be the first symptom to render the patient acutely aware of his urinary disease. Pyuria, urinary frequency and dysuria, together with localized, radiating or indistinct pain, are the most constant complaints. Often hematuria is strangely absent. In my cases the duration of the symptoms varied from twenty-six hours to five years; in two thirds of these the duration was less than one year (table 3).

2. Rayer: Traité des maladies des reins, 1841.

3. Hyman, Albert: Clinical Aspects of Surgical Diseases of the Urinary Tract in Children, J. Urol. **16**: 271 (Oct.) 1926.

4. Since writing this I have had such a case, in a five year old boy with two large stones (12 mm. in diameter) in the postesior urethra complicated by a urethrorectal fistula.

Most rare is stone without pyuria. The amount of pus varies from a few scattered white blood cells per high power field to thick, milky urine containing from 30 to 40 per cent of gross pus on standing. It is noteworthy that, even though urinary antiseptics are generously administered, evidence of urinary infection remains. Such an observation always indicates a complete urologic examination. While it is probable that in most cases showing chronic pyuria the examination will fail to disclose calculus disease, other major urologic conditions—notably congenital urinary obstructions—may be found; and these require special treatment if the life of the patient is to be saved. As a corollary, calculi are rarely if ever encountered unless urinary obstruction or stasis is present. Because of persistent pyuria, calculus disease is usually and erroneously diagnosed chronic pyelitis.

Sometimes frequency is the only symptom directing attention to the urinary tract. Most often it is but one manifestation in the symptom chain and is present in nearly all cases. It may be due to (1) inflammation about the bladder outlet, (2) vesical or urethral stone, or (3) paradoxic incontinence (overflow from a distended bladder regardless of the cause of retention), or may be a reflex from ureteral or renal calculi. The frequency may be so marked—especially with vesical stones—that the patient is classified as enuretic. Com-

TABLE 3.—*Symptoms*

| | |
|---|---|
| Pyuria | 13 |
| Frequency | 12 |
| Hematuria | 11 |
| Fever | 11 |
| Gastro-intestinal upsets | 10 |
| Colic | 7 |
| "Pyelitis" | 7 |
| Pain | 5 |
| Dysuria | 4 |
| "Cystitis" | 1 |

placence in the diagnosis of enuresis or of "acute cystitis" may dissuade one from subjecting the child to a complete urologic examination which would reveal the calculus. Recently I removed a large stone from the bladder of a 10 year old girl who had been treated five years for "acute cystitis."

Dysuria is caused by the same factors that produce frequency but, as a rule, the underlying pathologic process is more advanced when dysuria is present. This symptom may be so marked that the child cries out with each urination. Especially is this true when stone occupies the bladder or urethra. In males, congenital vesical outlet fibrosis or congenital posterior urethral valves not infrequently add to the urinary difficulty. One of my cases was of this type (fibrosis).

Pain may be felt as a sharp colic or a dull ache, or it may be absent. A large number of stones are "silent" for years. I have recently seen a 5 year old boy with a large ureteral stone; he had never had pain and the only urinary symptom had been a brisk hematuria with the passage of stringy clots one week previously. Pyelography revealed marked destructive changes in the ureter and kidney. Calculi that are more or less stationary in the kidney, ureter or bladder may give rise only to a dull ache in the loin or lower part of the abdomen. Such pains rarely radiate. With the migration of the stone, however, a smooth muscle spasm or colic is usually induced. When the stone is renal or ureteral, the radiation of pain is most often toward the groin, pubis or isolateral genitalia. It may terminate in the lower abdominal quadrant. The pain of migratory vesical stones is frequently referred to the tip of the penis and in the young too frequently directs attention to the genitalia.

In patients too young to describe their colics, the passage of renal or ureteral stones usually causes symptoms similar to those of enteral colic. With stone, the pain is apt to be more continuous and is not accompanied by diarrhea or other intestinal symptoms. Sometimes the passage of upper tract stones is manifested by the acute symptoms of vesical calculus, particularly marked frequency and dysuria.

Hematuria is comparatively rare in silent calculus disease of the young but is usually noticed immediately following stone migration. In infancy, blood stains on the diaper indicate a complete examination to rule out urinary stone, tumor and hemorrhagic nephritis.

In a great many cases of urinary stone, the symptoms are predominantly gastro-intestinal and, in fact, may be so pronounced as to misdirect attention entirely from

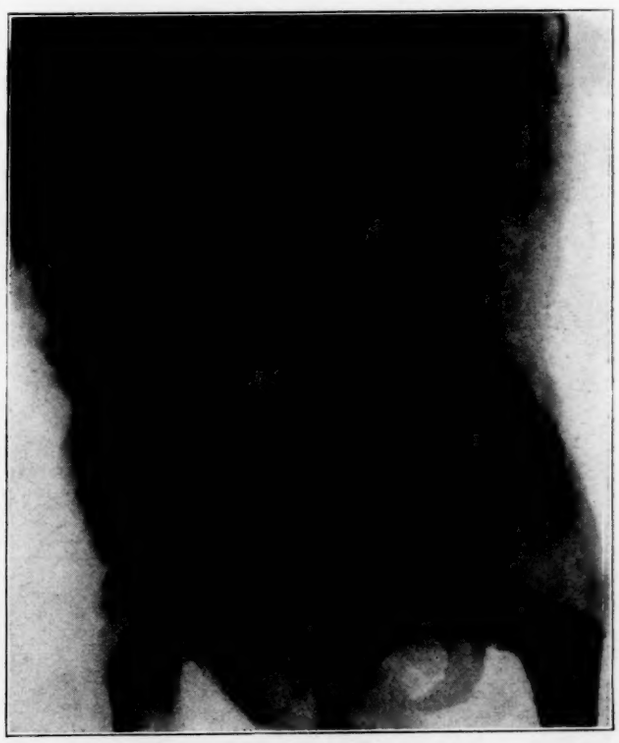

Fig. 3.—"Negative" shadows of two uric acid stones in left ureter of 19 month old girl. A wax bulb catheter was scratched on its passage up this ureter. A small stone was present in the bladder. Ureteral stones were passed following ureteral dilation. Urologic examination was carried out because of persistent pyuria, the child having been treated some months for "chronic pyelitis."

the urinary to the intestinal tract. Among these enteric symptoms, loss of weight or failure to gain weight, anorexia, nausea, vomiting, intestinal upsets or unusual pallor stand out. In these patients the demonstration of pyuria in a catheterized specimen demands that the cause of the urinary tract infection be determined.

Fever is rarely present unless urinary obstruction exists. In some instances marked infection of the urinary organs, particularly the kidney and bladder, will give rise to a diurnal fever. When infection accompanies complete or nearly complete urinary obstruction, the temperature may be very high and the associated toxemia may cause marked prostration.

## DIAGNOSIS

The diagnosis of urinary stone is often suggested by the symptoms and physical observations; it is confirmed

by urologic examination. Sometimes one may feel a hydronephrotic or pyonephrotic renal mass due to stone obstruction; by rectal examination a low ureteral or vesical stone may be palpated, or urethral examination may disclose a stone within this channel.

As the initial step in the program of a complete urologic examination, laboratory examinations are of importance as they indicate the nature of the bacterial invasion, the degree of pyuria and nitrogenous blood retention as well as the renal function (two-hour phenolsulphonphthalein test). A plain roentgenogram is taken to indicate stone, it being borne in mind that in the very young most stones are of uric acid composition and are, therefore, not radiopaque. In older children from 10 to 15 per cent of urinary calculi will not cast a roentgenographic shadow.

With this information at hand, the child is examined cystoscopically. In girls over 5 and in boys over 8

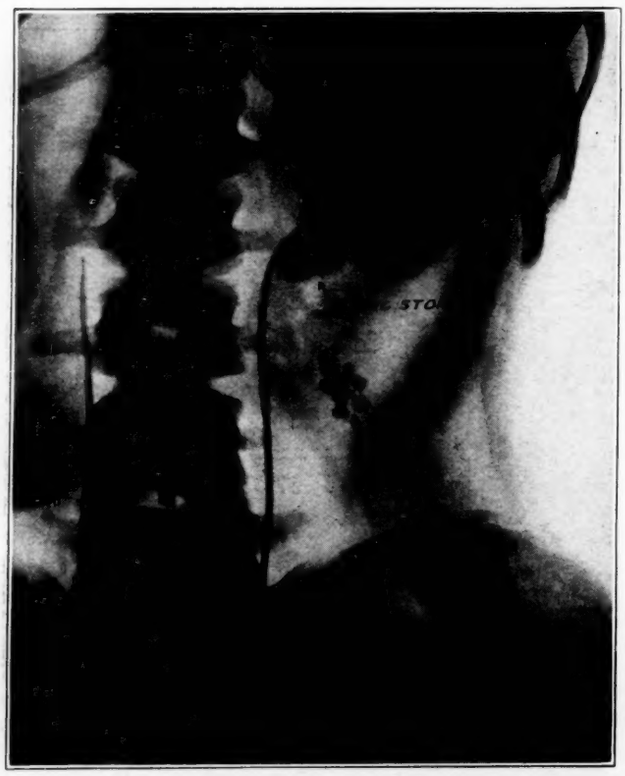

Fig. 4.—Pyelogram of right hydropyonephrosis (picture reversed) in a 10 year old girl. The pelvic outlet was firmly blocked by a large triangular stone. Below may be seen the shadows of a number of smaller stones filling the gallbladder. An ache in the right loin and chronic pyuria caused this patient to be treated four years for "chronic pyelitis." Nephrectomy was done with cure. At operation the biliary stones were identified as such.

years of age I perform this instrumentation as a routine without anesthesia. When required the anesthetic is of brief duration—only long enough to permit painless passage of the cystoscope. Vesical calculi are easily visualized. If there is roentgenographic or symptomatic suggestion of ureteral stone, a wax bulb catheter is passed. In the presence of stone, the wax will be scratched. I have successfully employed this diagnostic test in a girl, aged 19 months, with two uric acid ureteral stones, neither of which cast a shadow roentgenographically.

Ureteral catheterization is carried out to collect separated urine specimens, to determine the comparative renal function by intravenous dye (indigo carmine or phenolsulphonphthalein) injection, and to perform pyelography on the indicated side. I never make a pyelographic injection in an anesthetized patient and rarely do I make bilateral pyelograms. By this urographic method, shadows are localized within or outside the urinary tract and the degree of urinary tract injury or alteration is determined. Since uric acid and some urate stones are not radiopaque, they may appear as vacuoles or negative shadows within the pyelographic medium.

### TREATMENT

The treatment of urinary calculus disease in children is usually surgical but in a few instances ureteral stones will be delivered following ureteral dilation. About 90 per cent of all renal stones pass to the bladder and most of these are eventually passed from the meatus. Therefore, the revelation of a stone causing symptoms or evidence of urinary tract injury at once merits serious consideration of its removal. One may assume that the stone has not passed because of definite obstruction. In most instances, surgical methods must be resorted to. Nephrectomy is indicated only when the kidney is totally destroyed or the stone deposit is so large that its removal by nephrotomy would probably result in ultimate renal destruction. Often stone removal by pyelotomy will conserve the kidney. Impacted ureteral calculi are quite easily removed by ureterotomy. While small soft bladder stones may be

TABLE 4.—*Treatment*

| | | |
|---|---|---|
| Ureteral dilation | | 1 |
| Nephrectomy | | 5 |
| Pyelotomy | | 1 |
| Ureterotomy | | 1 |
| Cystotomy | | 3 |
| Refused | | 2 |
| Died | 1 | |

crushed by lithotripsy, large or hard stones are most successfully removed by cystotomy. This is the method of choice because, if present, bladder neck obstructions may be destroyed through the open wound or diverticula resected. Soft urethral stones have been crushed within the urethra; but urethrotomy offers probably less risk as well as a more certain method of stone extraction. The results of these various surgical procedures are eminently satisfactory (table 4). In my series there was only one death; colonic evisceration through an infected but healing nephrectomy wound occurred five weeks after operation; the patient had been out of bed three days.

### SUMMARY

Urinary calculi are of sufficiently frequent incidence in infancy and childhood to warrant the serious consideration of this condition in the differential diagnosis of urologic disease. Nearly always urinary stone is accompanied by chronic pyuria. As a rule, this pyuria leads to the diagnosis of chronic pyelitis and is unsuccessfully treated for months and years by internal medications, vaccines, and so on. All children in whom pyuria persists for more than four weeks after intensive medical therapy has been instituted should be subjected to a thorough urologic examination. In a certain number of these, stone will be disclosed; in nearly all, some form of major urinary tract disease requiring special treatment will be found.

In the young, calculi are more often found in boys. In most respects the symptoms are similar to calculus disease in adults and the same methods of urologic

investigation and treatment are carried out. In a few cases, nonoperative methods will aid in stone passage but usually surgical treatment is necessary. The operative treatment of stone is as satisfactory in children as in adults and should be employed without hesitation when urinary tract injury is evident or when further stone migration with expulsion seems unlikely. The adoption of a liberal surgical attitude in these cases will save many kidneys from subsequent destruction and it is probable that not a few lives will be saved.

33 East Sixty-Eighth Street.

## *Clinical Notes, Suggestions and New Instruments*

### SCURVY FOLLOWING A RESTRICTED DIET IN COLITIS

SAMUEL L. IMMERMAN, M.D., PHILADELPHIA

Mrs. M. R., aged 42, seen, Feb. 4, 1929, had become ill in September, 1928, the illness starting with slight nausea in the morning, followed later by distress on each side of the epigastrium and a lump in the throat, chiefly after eating fried scrapple. The distress consisted of "little pains," not of a pressing character. These symptoms persisted for a period of two months, when the patient noticed a partly formed and partly watery bowel movement, with mucus, attributed to the eating of pumpkin pie. The diarrhea lasted two days; it returned shortly with pain in the right side and around the umbilicus; this attack lasted two days. There was then a tendency to diarrhea with food particles in the bowel movement. By January, 1929, the bowel movement was of a mushy character. Up to this time the patient was on her usual diet, but for a short time in February, on account of a diagnosis of peptic ulcer, she was on a diet of milk and cream, eggs, and creamed soups. This diet aggravated the diarrhea. When I saw her in February, 1929, the patient weighed 126 pounds (57 Kg.); her weight before her illness had been 172 pounds (78 Kg.). The past history included oophorectomy fifteen years previously, with incidental appendectomy. Physical examination showed evidence of loss of weight, diseased tonsils, crowned teeth, an abdominal scar, and a palpable contracted sigmoid.

A fractional test meal, February 6, revealed a distinct hypoacidity; in April, 1929, the acid values were higher, however. Two examinations of specimens of mushy feces showed no occult blood and no ova by the brine method. Two examinations of sigmoidoscopic contents showed no amebas. The mucous membrane of the sigmoid was reddened and thickened with hypertonicity. The barium study showed a normal upper intestinal tract; the colon was likewise reported as being normal. No barium enema was given, and cholecystography was not carried out. The indigestion of two months' duration before the onset of the diarrhea is interesting. I have noticed this before in some other cases. I see no reason to believe that this patient suffered from gallbladder disease.

The patient was instructed to follow, beginning in February, 1929, Riesman's colitis diet, which is particularly valuable in fermentative dyspepsia. The articles permitted are rice, custard, junket, chicken broth with barley, soft boiled or poached eggs, milk-toast, boiled milk, white meat of chicken, and lamb chop. (I have used this diet for a period of two months in severe enteritis without observing any evidence of vitamin C deficiency and with cure of the patient's condition.) In April the patient felt better and took properly prepared carrots, spinach and peas. She became worse and thought that she could do better without the vegetables. From May to September she probably did not partake of vegetables more than five times. In September she commenced to subsist on a diet consisting almost entirely of 3 quarts of boiled milk a day. Her bowel movements then became for the most part formed; by January, 1930, she weighed 160 pounds (72.6 Kg.).

In the latter part of November she commenced to have purple spots on her legs, and to a less extent on her arms, chest and abdomen; slight trauma caused bleeding under the skin. A little later her gums became swollen, purple and sore, and the tooth brush caused bleeding; at the same time she had some nosebleed. On Christmas eve the ankles started to hurt; December 31, the knees commenced to hurt. The patient found it necessary to walk downstairs backward. I saw the patient, Jan. 3, 1930. The skin was harsh and dry; it was covered by a purpuric eruption most abundant on the legs; there was slight swelling about the ankles; the gums, chiefly about the molars, were purple and swollen. From January 3 to January 6, the patient took the juice of three oranges a day. On the 6th the rash showed some signs of fading, the gums were less spongy, and there was no swelling about the ankles. There was a slight tendency to looseness of the bowels. The patient was induced to take four oranges a day. January 13, the patient could walk comfortably; the rash had markedly faded, and the gums were much better. She had, however, resumed the use of three instead of four oranges, on account of the effect on the bowels. Neither the stool nor the urine had been examined for bleeding; on the 13th the hemoglobin estimation was 80 per cent (Tallqvist). The red blood cells in a blood smear showed nothing unusual.

It is interesting to speculate as to whether the restricted diet prevented this intestinal condition from making more rapid progress toward recovery. As far as I can judge from other severe cases of colitis of a similar nature, I should say it had not. Fletcher and Graham[1] report intestinal atony in chronic arthritis relieved by the addition of vitamin B to the diet. As for the diagnosis of scurvy, the manifest inadequacy of the diet and the prompt response to treatment should rule out other forms of purpura.

SUMMARY

A patient suffering from colitis was on a restricted diet for eleven months, during the last three months of which time the diet was greatly restricted. Typical scurvy developed. There is danger of the development of vitamin deficiency when restricted diets are too long continued.

809 South Sixtieth Street.

### EXPLOSION OF SILVER FULMINATE IN HISTOPATHOLOGIC LABORATORY

JOHN ALBERT MARSHALL, D.D.S., PH.D., SAN FRANCISCO

An explosion occurred Tuesday, March 11, which has jeopardized the eyesight of a research worker in one of the laboratories at the University of California. Sections of bone and teeth with their contained soft tissues had been stained by the so-called silver nitrate method.[2] The stender dishes containing the ammoniacal silver oxide solution were inadvertently left standing in the sun from Saturday noon until Tuesday morning. There were traces of alcohol in the silver solutions carried there by the sections of tissue. The sunlight hastened a chemical reaction between the silver, the ammonia and the alcohol and there resulted from it a highly explosive, very sensitive and unstable compound, silver fulminate ($C{=}N{-}O{-}Ag$), to be distinguished from the so-called fulminating silver, which explodes on drying.

When the dish was taken up to be emptied and cleaned, it was warm from the sun. The mere movement of the liquid was responsible for the detonation.

Since the accident was so serious to one of the workers and endangered others in the laboratory as well, a word of caution as to the handling of these silver solutions is necessary:

One should never work in the direct sunlight or leave preparation dishes or bottles so exposed.

Every precaution must be exercised to keep out ethyl alcohol. Freshly dehydrated sections should not be carried near the stender dishes containing the ammoniacal silver oxide solution.

All containers for silver solution should be immersed promptly but carefully in cold water.

When working at a room temperature above 70 F., one should keep the sections cold.

Second and Parnassus avenues.

1. Fletcher, A. A., and Graham, Duncan: Am. J. M. Sc. **179**: 91 (Jan.) 1930.
2. Bielschowsky-Maresch Method of Silver Impregnation for Nerve Fibers, in Schmorl, G.: Pathologisch-Histologischen Untersuchungsmethoden, Leipzig, Vogel, 1928, p. 177.

## PAROXYSMAL TACHYCARDIA IN AN INFANT

MILDRED VAN CLEVE, M.D., TUCSON, ARIZ.

Paroxysmal tachycardia is of rare occurrence in childhood, and especially so in early infancy. Willius and Amberg [1] recently collected and summarized the twenty-three cases previously reported, adding another case of their own of paroxysmal tachycardia with syncope in a child of 7 years. Only eight of these twenty-four cases occurred in infants less than 1 year of age.

The case here reported is one of paroxysmal tachycardia with syncope in an apparently healthy infant of 7 months, with no other evidence of cardiac disturbance.

### REPORT OF CASE

M. M., a white girl, born after a full-term pregnancy terminated by a difficult labor with high forceps delivery, was apparently entirely normal at birth and weighed 8 pounds (3.6 Kg.). On discharge from the hospital at the age of 2 weeks she was in good condition and was on breast feedings supplemented by a cow's milk formula.

She was first seen in consultation, March 6, 1925, at the age of 5 weeks, having been admitted to the hospital several days previously because of failure to gain. There was a two weeks' history of stationary or decreasing weight, constipation, green stools, colic, crying and restlessness. Breast feedings had been discontinued and several milk formulas, proprietary foods and protein milk had been tried without improvement. At the time of admission the infant weighed 7 pounds 3 ounces (3.2 Kg.); the physical examination showed no abnormalities except evidences of moderate undernutrition; the heart action was normal, and the temperature, pulse and respiration remained within normal limits during the period of hospital treatment. The infant was given a lactic acid milk and corn syrup mixture, on which she gained regularly, and was dismissed, March 19, with regular normal stools, weighing 8 pounds 8 ounces (3.8 Kg.), and in satisfactory general condition.

The baby was seen at monthly intervals for weighing and feeding advice and showed a satisfactory physical and mental development.

September 17, the baby was again admitted to the hospital, being brought in from its home in the country by the parents and the family physician. The patient was the first child of rather elderly parents, both intelligent and observant, the mother a trained nurse of many years' experience.

They reported that several days before admission they had noticed the baby's heart beating hard and rapidly against the chest wall for a time, but otherwise there seemed to be nothing wrong. On the night of admission, while caring for the baby, the mother noticed an abrupt and alarming attack which she described as characterized by marked pallor, cold extremities, and a brief period—perhaps one or two minutes—of apparently complete loss of consciousness, and during this time an extremely rapid heart rate, which the mother was unable to count. A physician was summoned from the nearest town, who reported the same conditions as described by the mother, except that on his arrival the infant had recovered consciousness, and the heart rate, counted with the stethoscope several times, was between 200 and 250.

Examination on admission showed a well nourished, well developed infant of 7 months, slightly pale, with a rectal temperature of 99.4. With the exception of a slight reddening of the pharynx, the general physical examination did not reveal anything abnormal.

The heart was not enlarged; the sounds were clear, with a slight softening of the first sound at the apex; no murmurs were heard; the rhythm was regular, and the rate at apex and wrist was 150. Electrocardiograms were not obtainable, so the type of tachycardia was not determined.

A urinalysis and blood count showed no variations from the normal. A Wassermann test was not made.

The infant remained under hospital observation three days, during which time the heart conditions remained the same; the pulse rate varied from 144 to 124 and the highest rectal temperature was 100.6. Small doses of tincture of digitalis were given during this time and were discontinued on the infant's dismissal, September 19, at which time the pulse was 128, the temperature 99, the pharynx clear, and the color and general condition excellent.

The patient was seen at the office, Aug. 3, 1926, when the mother stated that the baby had been perfectly well during the past year, with no evidence of cardiac disturbance of any kind, until one week before, when she had had a cold and the pulse had become extremely rapid for a time, so that the mother had been unable to count it. During this time the baby had looked very pale, but there had been no cyanosis, syncope or evidence of discomfort. The pulse had suddenly quieted down to normal and there had been one other short interval of tachycardia the morning of the day the child was brought to the office.

At this time the patient looked to be a fine healthy child, 33¼ inches (83 cm.) tall, weighing 28¼ pounds (12.8 Kg.). The throat was slightly red; the heart was not enlarged; the sounds were clear, and the rate was 135.

700 East Speedway.

1. Amberg, Samuel; and Willius, F. A.: Paroxysmal Tachycardia with Syncope Occurring in a Child, Am. J. Dis. Child. **38**: 551 (Sept.) 1929.

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## BACTEREMIA DUE TO SALMONELLA SUIPESTIFER*

SARA E. BRANHAM, PH.D., L. J. MOTYCA, M.D., AND C. J. DEVINE, M.D., NORFOLK, VA.

Although *Salmonella suipestifer*, long known as the "hog cholera bacillus," is most commonly found in diseased swine, human infections with this micro-organism have been occasionally reported. In the United States these have usually occurred as outbreaks of food poisoning, with the acute and transient gastro-enteritis which is characteristically caused by certain other members of the paratyphoid group of bacteria. Two of these outbreaks have been traced to tapioca pudding [1]; one was milk-borne.[2]

Exceptions to these cases of food poisoning have been a fatal infection diagnosed as lobar pneumonia, in which *Salmonella suipestifer* was isolated from the blood [3]; another lung infection in which the organism was found in the sputum, blood and pleural fluid,[4] and a fatal case simulating typhoid [5] in which *Salmonella suipestifer* was found in the blood.

In other countries definitely identified strains of *Salmonella suipestifer* have been associated with food poisonings,[6] and infections with this organism, not of the food poisoning type, have also occurred in England and Germany. Recently Nabarro, White, Dyke and Scott [7] reported a joint infection and a septicemia. Kopp [8] described a case from Frankfort.

So far as we are aware, *Salmonella suipestifer* has been reported in the United States in only one case [5] in which the clinical picture was neither that of an acute gastro-enteritis nor that of pneumonia. In view of this fact we believe that a description of the following case should be placed on record:

### REPORT OF CASE

*History.*—J. E., a colored male laborer, aged 49, was admitted to the Norfolk Protestant Hospital, Aug. 9, 1929, having collapsed while at work, apparently from a heat stroke. The patient remained in the hospital for a week and was discharged in apparently good condition. He returned, August 20, com-

* From the Hygienic Laboratory, U. S. P. H. S. (Sara E. Branham), and the Norfolk Protestant Hospital.

1. Krumwiede, C.; Provost, D. J., and Cooper, G. M.: Studies on the Paratyphoid-Enteritidis Group: VII. Enteric Infection ("Food Poisoning") Due to Tapioca Pudding Contaminated with B. Cholerae-Suis (B. Suipestifer), J. M. Research **43**: 53-59 (Jan.-March) 1922. Megrail, E., and Smith, A. M.: Small Outbreak of Food Infection, with Isolation of Paratyphoid Group Organisms from Infected Material, Ohio State M. J. **21**: 314-315 (May) 1922.

2. Stewart, A. C., and Litterer, William: An Outbreak of Gastro-Enteritis, J. A. M. A. **89**: 1584-1587 (Nov. 5) 1927.

3. Shaw, F. W.: An Infection of Man Probably Due to Salmonella Suipestifer, J. Lab. & Clin. Med. **12**: 141-144 (Nov.) 1926.

4. Bullowa, J. G. M.: Bacillus Suipestifer (Hog Cholera) Infection of the Lung, M. Clin. North America **12**: 691-694 (Nov. 28) 1928.

5. Bauer, J. T., and McClintock, M.: Fatal Septicemia in Man Due to Bacillus (Salmonella) Suipestifer, J. Infect. Dis. **44**: 292-297 (April) 1929.

6. Braun, H., and Mündel, F.: Ueber den Erreger der Offenbacher Speiseeis-Epidemie, Klin. Wchnschr. **6**: 1286-1288 (July 2) 1927. Scott, W. M.: Food Poisoning Due to Bacillus Suipestifer (Subgroup II), J. Hyg. **25**: 406-414 (Nov.) 1926.

7. Nabarro, D.; White, P. B.; Dyke, S. C., and Scott, W. M.: Two Cases of Human Infection by the American Hog Cholera Bacillus, Lancet **217**: 868-870 (Oct. 26) 1929.

8. Kopp, R.: Zur Frage der Menschenpathogenität des Bacillus Suipestifer, Deutsche med. Wchnschr. **52**: 2156-2157 (Dec. 17) 1926.

plaining of headache, chills, fever, pain in the back and perineum, and difficulty in urination. The chills had begun the day after the patient was discharged from the hospital, and occurred two or three times a day.

*Examination and Course.*—On physical examination the patient appeared well developed and well nourished. The pulse was 80 to 135, full and bounding; the blood pressure was 118 systolic and 60 diastolic; the temperature ranged from 99 to 105.4, and was septic in type; respiration varied from 20 to 55. The skin was hot and moist with perspiration; the mouth was dry and the tongue coated. Breath sounds were exaggerated throughout the chest, with occasional mucous râles in both lung bases. The heart was normal in size and the sounds were clear. There was slight distention of the abdomen. A stricture of the urinary meatus was evident, and an indurated swelling which extended from the bulbous urethra to the anus, which was tender and painful. The prostate was small, hard and tender. Urine was passed with effort. There was no urethral discharge. A cystitis and a pyelitis developed early in the course of the illness. The urine showed a trace of albumin and a variable amount of pus. The Wassermann test was negative. The leukocyte count was 6,200; hemoglobin was 73 per cent. The differential count was: neutrophils 75 per cent; small lymphocytes 17 per cent; large lymphocytes 7 per cent, and eosinophils 1 per cent. A blood culture, August 22, gave a pure growth of a gram-negative, motile bacillus, which was later found to be *Salmonella suipestifer*. No further cultures were made for several weeks. Four cultures made between the 10th and 16th of October were all negative.

showed fibrous adhesions and a slight passive congestion. The kidneys showed a hemorrhagic mottling. Microscopic sections revealed many small abscesses in the medulla and cortex. There was an inflammatory exudate in the mucosa of the pelvis and ureters.

The urinary bladder contained foul-smelling urine. The mucosa was hemorrhagic, and sections of it showed necrotic and inflammatory changes. *Escherichia coli* was obtained from cultures.

When the parotid glands were incised, thick pus came forth. Cultures made from this pus gave a growth of *Staphylococcus aureus.*

The blood culture made at autopsy gave negative results. The serum agglutinated the organism, which had previously been isolated, in dilutions as high as 1 : 320.

It is evident that the patient had three infections: first a septicemia from *Salmonella suipestifer,* then a genito-urinary infection associated with *Escherichia coli,* and, third, a parotitis due to *Staphylococcus aureus.* Owing to the fact that no blood cultures were made between August 22, when *Salmonella suipestifer* was isolated, and October 10, the duration of the septicemia was not determined. Whether or not this organism was originally responsible for the infection of the urinary tract is not known, since it was not recovered from it either when the periurethral abscess was drained or at autopsy. But it is evident that a bacteremia involving the organism in question was the outstanding feature of the early stages of the patient's illness.

*Bacteriologic Studies.*—The blood culture, August 22, yielded a pure culture of a gram-negative motile bacillus. Colonies on

*Serums* *

| Antigens | Typhoid | | | | | | Para A | | | | | | Para B | | | | | | Para C | | | | | | Salmonella Enteritidis | | | | | | Salmonella Suipestifer | | | | | | J. E. | | | | | | Saline Control |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | 50 | 100 | 200 | 400 | 800 | 1,600 | |
| Typhoid | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Para A | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Para B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Para C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 4 | 4 | 2 | 0 | 0 | 0 |
| Salmonella enteritidis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Salmonella suipestifer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 1 | 0 | 2 | 2 | 2 | 2 | 1 | 0 | 0 |
| J. E. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 1 | 0 | 0 | 0 |
| Salmonella aertrycke | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* In the table, 4 indicates complete agglutination; 0, no agglutination.

Agglutination tests with the patient's serum failed to agglutinate the following organisms in dilutions of 1 : 40 and over: *Eberthella typhi* (*B. typhosus*), *Salmonella paratyphi* (*B. paratyphosus* A), *Salmonella schotmülleri* (*B. paratyphosus* B) and *Brucella melitensis,* varieties *melitensis* (A) and *abortus.* The patient's serum agglutinated the organism, which was recovered from the blood in dilutions up to 1 : 160.

August 21, the periurethral abscess was incised and drained and much foul pus was removed. A pure culture of *Escherichia coli* (*B. coli*) was obtained from the pus. A meatotomy was performed on the same day.

The patient continued to have almost daily chills with fever and delirium for about five weeks, when improvement was noted. His temperature decreased but remained septic until death. The chills ceased, September 17. The abscess healed, but urine began to flow through the incision by the end of the third week. September 30, he had another chill and developed an epididymitis which subsided in a few days. October 19, he developed an acute bilateral parotitis. The patient died, October 22.

*Autopsy.*—An autopsy was performed five hours after death. The observations may be summarized as follows:

The body was much emaciated and showed scars about the legs and arms. There was a urinary fistula which opened between the bulbous urethra and the anus.

The peritoneum was lacking in moisture. The liver was adherent to the diaphragm, colon and stomach. There were also fibrous adhesions about the gallbladder. The lungs showed extensive fibrous adhesions and slight passive congestion. The pericardium and heart were not remarkable. The spleen showed moderate passive congestion. There were no anatomic or microscopic lesions of the gastro-intestinal tract. The liver

endo-agar were small (0.5 to 1.5 mm.), round, colorless, raised and smooth. A further study of the cultural characteristics of this organism indicated that it was a member of the paratyphoid group of bacteria; viz., acid and gas in mediums containing dextrose, but not in those containing lactose or saccharose. An initial acidity followed by pronounced alkalinity in litmus milk, nonliquefaction of gelatin, failure to produce indole, failure to ferment arabinose, dulcitol and trehalose, as well as nonproduction of hydrogen sulphide, indicated that this organism was *Salmonella suipestifer.*

A sample of the patient's serum, taken at the time of the positive blood culture, did not agglutinate cultures of the typhoid organism, para A, para B, *Salmonella aertrycke,* or *Salmonella enteritidis* at all but agglutinated *Salmonella suipestifer* and also a strain of Hirschfeld's para C in dilutions as high as 1 : 400. Serum taken from the heart at autopsy agglutinated the culture J. E. in dilutions as high as 1 : 320.

Rabbits were immunized with the culture J. E. Agglutination tests were made with serums obtained from them, and with serums from rabbits immunized with definitely known strains of para C, para A, para B, the typhoid bacillus, *Salmonella enteritidis,* and *Salmonella suipestifer,* as well as with the patient's serum, suspensions of all these cultures being used as antigens. The results of these agglutination tests are shown in the accompanying table. The strains J. E., para C and *Salmonella suipestifer* show a close serologic relationship to one another but not to any other members of this group.

There is undoubtedly a close serologic relation between *Salmonella suipestifer* and para C. Some consider them to be identical, while others believe them to be distinct species. The one strain of para C available for this study is culturally quite

different from *Salmonella suipestifer*, since it ferments arabinose, dulcitol and trehalose, besides producing hydrogen sulphide. The strain J. E. seems to be identical with the strain of *Salmonella suipestifer* used in this study.

SUMMARY

From the blood of a patient suffering from an acute febrile condition, a gram-negative motile bacillus was isolated. This micro-organism was identified as *Salmonella suipestifer*. Human infections with this organism, other than those presenting the clinical picture of either food poisoning or pneumonia, are so rare that it seems desirable that such a case should be recorded.

# Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS ADOPTED THE FOLLOWING REPORTS.

H. J. HOLMQUEST, Secretary.

## COMPREX ELECTRO-CAUTERY AND DIAGNOSTIC LIGHT ACCEPTABLE

The Comprex Electro-Cautery and Diagnostic Light, manufactured and submitted by the Comprex Oscillator Corporation, New York, is, as its name indicates, a device for cauterization by means of electrodes which are electrically heated to the desired temperature.

The device consists essentially of a transformer, designed to operate on either a 110 or 220 volt, 60-cycle alternating current circuit; a control whereby the current flowing through the secondary of the transformer may be adjusted to such value as will heat the electrode to the desired temperature, and the requisite switches and electrodes. The transformer is also tapped at such point as will give the desired voltage for the operation of a diagnostic light. In this circuit there is placed a variable resistance for controlling the current taken by this light.

The Council has been informed by a surgeon who has used this device that cauterization takes place readily as well as deeply with the several electrodes provided with the instrument. The suggestion, however, is made that the cautery points of the electrodes be made smaller in diameter so that they may be introduced into small openings, such as cervical canals, or other narrow apertures.

The Council on Physical Therapy declares the Comprex portable cautery acceptable for inclusion in its list of accepted devices for physical therapy.

## "STOPPOLLEN" AIR FILTER ACCEPTABLE

The "Stoppollen" Air Filter, manufactured by the Davies Air Filter Company and submitted by Mr. Charles Davies, New York, is stated to be a simplified portable filter which delivers dust and pollen-free air. The apparatus is described as consisting "of a cabinet rectangular in shape, twenty-five inches wide, fifteen inches high and nine inches deep, which contains the filter screen, a pressure fan and an electric motor of one-thirtieth horse power," and is so constructed as to fit into any sized window. The cost of operating the device continuously for twenty-four hours amounts to about 10 cents.

Peshkin and Beck, who conducted severe tests to determine the efficiency of the Stoppollen air filter in keeping a room free from dust and pollen, report as follows:

These tests were conducted in New York City and also in a suburb, Beechurst, Long Island, during June, July, August and September, 1929. The unit was installed in a room 15 by 12 by 10 feet (1,800 cubic feet). In order to obtain a concentration of all the air delivered, a large funnel with an outlet measuring one-half square foot was placed over the face of the filter. Two ordinary atmospheric glass slides thinly coated with white petrolatum and set at an angle were placed at the end of the outlet of the funnel for twenty-four hours. Four other slides were placed face up in chosen locations about the room, also for twenty-four hours. Pollen counts were made simultaneously from slides directly exposed to the open air. The technic employed with reference to materials, exposure of slides and counting of pollen was that described by Durham. At no time in the period of four months were any pollen grains found on the six slides exposed in the filtered air chambers; and at the same time the slides remained almost entirely free from dirt particles. On three separate occasions 0.17 gram of short ragweed, representing about 65,000,000 pollen grains, was thrown into the intake of the filter. A careful search of the slides placed at the exit of the funnel in each instance showed that no pollen had passed the filter screen. Short ragweed was used for these tests because it is the most important pollen clinically and at the same time one of the smallest pollens causative of hay-fever and pollen asthma.

The Council on Physical Therapy declares the "Stoppollen" Air Filter acceptable for inclusion in its list of accepted devices.

## WEST'S GRAVITISER NOT ACCEPTABLE

The device known as West's Gravitiser was submitted to the Council on Physical Therapy for consideration by Richard Welling, Counselor at Law, 2 Wall Street, New York, in behalf of his client, William West, 330 Lexington Avenue, New York.

According to the patent specifications, this device, known as a tilting table, was patented by one Gideon Anderson and is primarily intended for use as a support on which a patient may rest at certain angles of inclination for the purpose of exercising within limits the vascular system for curative or health purposes.

In the descriptive matter submitted, the claims are made that, with the use of this apparatus, which tilts the body to a certain angle, sight was entirely restored in acute retinitis, convulsions were aborted in one hundred and three out of one hundred and four seizures in epilepsy, symptoms of a rheumatic knee of two years' standing were entirely controlled in six weeks, "earache" was relieved in one treatment, nasal ulcers were controlled in four days, and bleeding in simple gastric ulcer was controlled in four days!

From an examination of the device, the Council concludes that the Gravitiser is not capable of producing any effects that cannot be obtained by placing a patient on a stretcher or a bench and rapidly or slowly raising one end of the stretcher or bench manually.

The Council on Physical Therapy rejects the Gravitiser because absurd and unwarranted therapeutic claims are made for it and because its superiority over a simple device, such as an ordinary stretcher or table, has not been demonstrated.

# Council on Pharmacy and Chemistry

## NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

**SCILLAREN-B.—Glucosidum e scilla solubile.**—The amorphous component of the natural mixture of the glucosides occurring in squill, *Urginea maritima*. Completely dried scillaren-B contains approximately 99.5 per cent active glucosidal substance. Scillaren-B dried in a high vacuum at 78 C. for fifteen hours loses not more than 5 per cent of its weight.

*Actions and Uses.*—The same as those of scillaren.

*Dosage.*—Scillaren-B is for intravenous administration when immediate action is imperatively indicated. Not more than 0.5 mg. (1/130 grain) of scillaren-B may be injected intravenously within twenty-four hours.

Manufactured by Sandoz Chemical Works, Basle, Switzerland (Sandoz Chemical Works, Inc., New York, distributor). U. S. patent No. 1,516,552 (Nov. 25, 1924; expires 1941) and No. 1,579,338 (April 6, 1926; expires 1943). U. S. trademark 173,046.

*Ampules Scillaren-B:* Each cubic centimeter represents 0.5 mg. (1/130 grain) of scillaren-B.

Scillaren-B occurs as a fine white or slightly yellowish white, odorless, granular powder, possessing a very bitter taste; freely soluble in water, ethyl and methyl alcohol, 1 in 5, respectively, very slightly soluble in chloroform, 1 in 10,000, and practically insoluble in ether. An aqueous solution is neutral toward litmus. An alcoholic solution of scillaren-B is dextrorotatory.

Dissolve about 0.001 Gm. of scillaren-B in 0.1 cc. of methyl alcohol; add 3 cc. of acetic anhydride, followed by the addition of 0.1 cc. of sulphuric acid, agitate and cool: a violet-blue color results, gradually changing to a blue (*this color reaction is presumptively due to aglucone, scillaridin-B*). Dissolve about 0.1 Gm. in 10 cc. of methyl alcohol, add 10 cc. of tenth-normal sulphuric acid solution, heat the mixture

under a reflux condenser on a steam bath for thirty minutes: only a slight turbidity results; disconnect the reflux condenser and continue heating for one hour to remove the methyl alcohol: the aglucone separates as small yellowish brown greasy lumps which solidify on cooling; collect the resultant aglucone on a filter paper, wash with water and dry in a partially exhausted desiccator over sulphuric acid: it responds to the foregoing color reaction. The neutralized filtrate reduces alkaline cupric tartrate solution.

Dissolve about 0.025 Gm. of scillaren-B in 1 cc. of carbon dioxide free water: a clear and colorless solution results (*aglucone*). Add to the foregoing solution 1 cc. of methyl alcohol, followed by the addition of 1 cc. of lead acetate solution: no immediate coloration or precipitation results (*appreciable amounts of tannoid substances*). Dissolve about 0.025 Gm. in a mixture of 2 cc. of methyl alcohol and 2 cc. of water, add 0.5 cc. of alkaline cupric tartrate solution, heat for ten seconds: no turbidity results (*reducing free sugars*).

Dissolve about 0.5 Gm. of scillaren-B, accurately weighed, in 25 cc. of 75 per cent (by weight) of ethyl alcohol; observe the angular rotation at 20 C.: the specific rotatory power in alcohol [α] $\frac{D}{20}$ falls between + 35 and + 41.

Ignite about 0.1 Gm. of scillaren-B, accurately weighed: the residue does not exceed 0.1 per cent. Dry about 0.2 Gm., accurately weighed, over sulphuric acid in a partially exhausted desiccator for forty-eight hours at 20 C.: the loss in weight does not exceed 2 per cent.

Transfer about 0.2 Gm. of scillaren-B, accurately weighed, previously dried over sulphuric acid in a partial vacuum, to a 250 cc. Erlenmeyer flask, dissolve in 5 cc. of water, add 20 cc. of 5 per cent sulphuric acid; heat on a steam bath for six hours, cool, and collect the separated yellowish brown lumps on a Gooch crucible; wash free from acid with water, dry for twenty-four hours at 60 C., and weigh: the amount of aglucone found is not less than 50 per cent nor more than 57.5 per cent.

**SCILLAREN.—Glucosidum e scilla totum.**—A mixture of the natural glucosides, scillaren-A and scillaren-B, occurring in fresh squill *Urginea maritima*, in the proportions in which they exist in the fresh crude drug; namely, about 2 parts of scillaren-A to 1 part of scillaren-B. Completely dried scillaren contains approximately 98 per cent of the active glucosides. Scillaren dried in a high vacuum at 78 C. for fifteen hours loses not more than 6 per cent of its weight.

*Actions and Uses.*—The cardiac action of scillaren is essentially similar to that of digitalis; but this action is apparently less persistent than that of digitalis.

*Dosage.*—1.6 mg. (1/40 grain) orally from three to four times daily until compensation is established or until minor toxic symptoms are induced. After compensation is established, 0.8 mg. (1/80 grain) may be administered from two to four times daily.

Manufactured by Sandoz Chemical Works, Basle, Switzerland (Sandoz Chemical Works, Inc., New York, distributor). U. S. patent No. 1,516,552 (Nov. 25, 1924; expires 1941) and No. 1,579,338 (April 6, 1926; expires 1943). U. S. trademark 173,046.

*Tablets Scillaren:* Each tablet represents 0.8 mg. (1/80 grain) of scillaren.

*Solution Scillaren:* Each cubic centimeter represents 0.8 mg. (1/80 grain) of scillaren.

*Dosage.*—Twenty drops from three to four times daily. A dropping device is supplied with each package, designed to yield 20 drops per cubic centimeter.

Scillaren occurs as a white or yellowish white, odorless granular powder, possessing a very bitter taste; soluble in absolute ethyl alcohol, 1 in 5, in methyl alcohol 1 in 5, sparingly soluble in water, 1 in 3,000, practically insoluble in chloroform, practically insoluble in ether. An aqueous solution is neutral toward litmus. An alcoholic solution of scillaren is levorotatory.

Dissolve about 0.001 Gm. of scillaren in 0.1 cc. of methyl alcohol, add 3 cc. of acetic anhydride, followed by the addition of 0.1 cc. of sulphuric acid, agitate and cool: a violet-red color results, immediately turning to a bluish green (*this color reaction is due to the mixture of aglucones*). Dissolve about 0.1 Gm. in 10 cc. of methyl alcohol, add 10 cc. of tenth-normal sulphuric acid solution, heat the mixture under a reflux condenser on a steam bath; after five minutes the aglucone, scillaridin-A, begins to crystallize; continue heating for thirty minutes, cool, collect the resultant aglucone on a filter, wash with water and dry at 105 C.; its melting point is not definite, occurring with decomposition at about 220 C., and responding to the color reaction characteristic for scillaren-A and scillaridin-A. On further heating the filtrate for one hour on a steam bath without a reflux condenser, the hydrolysis progresses with a partial resinification of the mixed aglucones; they separate partially in the form of yellowish-brown oily droplets which, on cooling, solidify into a brownish brittle mass; neutralize the solution with tenth-normal sodium hydroxide solution; the separated residue consisting of a mixture of the two aglucones, namely, scillaridin A and B, is removed by filtration: the filtrate contains nonhydrolyzable scillaren-B and cleaved sugar but is entirely free from scillaren-A. Boil about 2 cc. of the filtrate with 5 cc. of alkaline cupric tartrate solution: a reduction of the latter results. Transfer the remainder of the filtrate to a glass stoppered Erlenmeyer flask, add 25 cc. of ethyl acetate, followed by the addition of 15 Gm. of a finely powdered ammonium sulphate; decant the ethyl acetate and the aqueous ammonium sulphate layers into a suitable Squibb separatory funnel, shake vigorously, allow the two layers to separate completely; filter the ethyl acetate solution through paper by aid of suction into a small flask and evaporate to dryness; the residue mixed with 20 cc. of acetic anhydride and 0.5 cc. of sulphuric acid gives a violet-blue color, changing to the blue characteristic of scillaren-B.

Dissolve about 0.025 Gm. of scillaren in 2 cc. of methyl alcohol: a clear colorless solution results, and remains clear on dilution with an equal volume of carbon dioxide free water (*aglucone*). Add to the foregoing solution 1 cc. of a mixture of equal volumes of methyl alcohol and lead acetate solution: a slight yellow coloration and opalescence results in ten minutes, but no precipitation (*appreciable amounts of tannoid substances*). Dissolve about 0.025 Gm. in a mixture of 2 cc. of methyl alcohol and 2 cc. of water, add 0.5 cc. of alkaline cupric tartrate solution, heat for ten seconds: no turbidity results (*reducing free sugars*).

Dissolve about 0.5 Gm. of scillaren, accurately weighed, in 25 cc. of 75 per cent (by weight) of ethyl alcohol; observe the angular rotation at 20 C.: the specific rotatory power in alcohol [α] $\frac{D}{20}$ falls between — 25 and — 35.

Ignite about 0.1 Gm. of scillaren, accurately weighed: the residue does not exceed 0.25 per cent. Dry about 0.2 Gm., accurately weighed, over sulphuric acid in a partially exhausted desiccator for forty-eight hours at 20 C.: the loss in weight does not exceed 4 per cent.

Transfer about 0.2 Gm. of scillaren, accurately weighed, *previously* dried over sulphuric acid in a partial vacuum, to a 250 cc. Erlenmeyer flask, dissolve in 5 cc. of water, add 20 cc. of 5 per cent sulphuric acid; heat on a steam bath for six hours; cool and collect the separated crystalline and oily resinous mixture on a Gooch crucible, wash free from acid with water; dry for twenty-four hours at 60 C., and weigh: the amount of aglucone found is not less than 48 per cent nor more than 53 per cent.

Scillaren-A, a component of scillaren, responds to the following tests for identity and purity:

Scillaren-A occurs as small, colorless, odorless crystals or crystalline powder, with a very bitter taste; soluble in ethyl alcohol, 1 in 350, in methyl alcohol, 1 in 80; in a mixture of 4 parts by volume of ethyl alcohol and 1 part by volume of water, 1 in 40; practically insoluble in chloroform and ether. It dissolves in water with difficulty, possessing a neutral reaction toward litmus. The specific rotation in 75 per cent alcohol [α] $\frac{D}{20}$ falls between — 72 and — 78 determined on the undried material.

Dissolve about 0.001 Gm. of scillaren-A in 0.1 cc. of methyl alcohol, add 3 cc. of acetic anhydride, followed by the addition of 0.1 cc. of sulphuric acid: on immediate agitation a red color results, disappearing rapidly and changing to a persistent light green (*this color reaction is due to aglucone, scillaridin-A*). Dissolve about 0.1 Gm. in 10 cc. of methyl alcohol, add 10 cc. of tenth-normal sulphuric acid solution, heat the mixture under a reflux condenser on a steam bath for thirty minutes, collect the resultant aglucone on a filter paper, wash with water and dry at 105 C.: its melting point is not definite, occurring at about 220 C., and responding to the foregoing color reaction. The neutralized filtrate reduces alkaline cupric tartrate solution immediately.

Dissolve about 0.025 Gm. in 2 cc. of a mixture of 4 parts of ethyl alcohol (by volume) and 1 part of carbon dioxide free water: a clear colorless solution results, which remains clear on dilution with an equal volume of carbon dioxide free water (*aglucone*). Add to the foregoing solution 0.1 cc. of lead acetate solution: no immediate coloration or precipitation results (*appreciable amounts of tannoid substances*). Dissolve about 0.025 Gm. in a mixture of 2 cc. of methyl alcohol and 2 cc. of water, add 0.5 cc. of alkaline cupric tartrate solution, heat to boiling: the blue color persists for some time (*reducing free sugars*). Dissolve about 0.5 Gm. of scillaren-A, accurately weighed, in 25 cc. of 75 per cent (by weight) of ethyl alcohol; observe the angular rotation at 20 C.: the specific rotatory power in alcohol [α] $\frac{D}{20}$ falls between — 72 and — 78.

Incinerate about 0.1 Gm. of scillaren-A, accurately weighed: the residue does not exceed 0.1 per cent. Dry about 0.2 Gm., accurately weighed, over sulphuric acid in a partially exhausted desiccator for forty-eight hours at 20 C.: the loss in weight does not exceed 2.5 per cent.

Transfer about 0.2 Gm. of scillaren-A, accurately weighed, *previously* dried over sulphuric acid in a partial vacuum, to a 250 cc. Erlenmeyer flask, add 10 cc. of methyl alcohol and 10 cc. of tenth-normal sulphuric acid solution, reflux on a steam bath for fifteen minutes, disconnect the condenser and boil on the steam bath until reduced to about a 10 cc. volume, cool and collect the crystals formed on a Gooch crucible, wash free from acid with water, dry to constant weight at 105 C.: the amount of aglucone found should not be less than 48 per cent, nor more than 53 per cent.

**DEXTROSE** (See New and Nonofficial Remedies, 1930, p. 245).

The following dosage form has been accepted:

*Ampoules Glucose (Dextrose, U. S. P.) Lilly, 50 Gm., 100 cc.:* Each ampule contains dextrose, U. S. P., 50 Gm.; distilled water to make 100 cc.; accompanied by an ampule containing 4 cc. of a buffer solution which contains in 100 cc. sodium chloride, 0.9 Gm., and sufficient sodium phosphate (approximately 4.5 Gm.) to bring the resulting combination of the buffer and glucose solution to a hydrogen ion concentration of $p_H$ 7.

**COD LIVER OIL WITH VIOSTEROL 5 D** (See New and Nonofficial Remedies, 1930, p. 257).

**Parke, Davis & Company's Cod Liver Oil with Viosterol 5 D.**—A brand of cod liver oil with viosterol 5 D-N. N. R.

Manufactured by Parke, Davis & Co., Detroit, under U. S. Patent 1,680,818 (Aug. 14, 1929; expires 1945) by license of the Wisconsin Alumni Research Foundation.

Viosterol, prepared by the method described under Parke, Davis & Co.'s viosterol in oil 100 D, is added to cod liver oil and the finished product is required to have a vitamin A potency of not less than 500 pharmacopeial units and to have the vitamin D potency of cod liver oil with viosterol 5 D-N. N. R.

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**Medical Education.**—The position that medical science has now assumed in the social polity demands that all educated men and women should have some knowledge of the subject, whether they have had a medical training or no.—Singer, Charles: A Short History of Medicine, Oxford, 1928, preface.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 31, 1930

## PSITTACOSIS

The most serious epidemic of psittacosis thus far recorded occurred last winter. The number of cases reported between July and February throughout the world reached nearly four hundred, and undoubtedly many cases occurred that were not reported. The mortality among these patients was about 35 per cent. The countries in which cases are known to have occurred included the United States, England, Germany, France, Austria, Denmark, Switzerland, Netherlands, Czechoslovakia, Argentina, Brazil, Paraguay and the Hawaiian Islands. The reaction of the public to these scattered outbreaks was unusual. Since the epidemiology of psittacosis is now clearly understood, an occasion cannot arise in which the disease is beyond control. The public should be assured, therefore, that a great epidemic would be impossible. In an elaborate review prepared for the League of Nations,[1] Rouvakine shows that psittacosis has appeared in medical reports for at least fifty years. Hymann reviewed the literature up to the recent epidemic and found 164 cases with 54 deaths reported, including the outbreak in Paris in 1892 with 51 cases and 16 deaths, a severe outbreak in a little Rhineland town near Cologne in 1909, 2 cases in Edinburgh in 1924, and 1 case in the United States in 1928.

All previous outbreaks of psittacosis, as well as the last epidemic, have been connected with the handling of parrots and other similar wild birds. It seems established that the recent outbreak was the result of a large shipment of parrots from Paraguay and Brazil, many of which died on the way to the dealers and many more after having been distributed widely throughout the world. The outbreak coincided with this event and its subsidence with the placing of an embargo on further shipments of parrots. Psittacosis apparently may be transmitted not only by parrots that are evidently ill but also by those that appear to be well and by the cages in which they are kept. It is estimated that more than 40,000 parrots are imported annually into Germany from South America, Africa, Australia, India and the Malay Archipelago and from there shipped all over the world. Hamburg is a great distributing center. Thus, the machinery is in shape to distribute the disease somewhat promptly from its epidemic center in South America to distant lands. The Amazon species of parrot is the only one known to have given rise to an epidemic of psittacosis among human beings.

The recent epidemic took the form of small outbreaks confined to members of a family or others living in the same house. The patients were almost exclusively persons who had been in direct contact with sick parrots. This fact is so striking that some deny the possibility of transmitting psittacosis from man to man. The most important point in making the diagnosis is to trace the patient's contact with a parrot or parrakeet. The attack seems more serious when contracted from a bite or peck by the bird. The point of entry of the virus may be a factor in the seriousness of the disease.

The incubation period has been established at from eight to fifteen days. The onset is sudden, differing thus from typhoid. The initial symptoms may be a chill, malaise, vomiting and headache, and diarrhea or constipation. There are always pulmonary symptoms. The pulmonary focus forms gradually toward the end of the first week. The pneumonia is atypical. Vesicular breathing is replaced by bronchial and that often by absolute silence, leading the physician sometimes to diagnose an effusion. This may be confined to one lung, but frequently the other lung will become similarly affected. Pulmonary symptoms continue until the temperature subsides and frequently longer. The consolidated patches then soften rapidly and completely dissolve, leaving no trace in the lung. The pulmonary symptoms do not seem to be the immediate cause of death, for dyspnea may be intense before they set in. A typical symptom is the almost complete absence of expectoration even when the pulmonary symptoms are serious. The sputum when present is sometimes rusty but never blood stained as in typical pneumonia nor mucopurulent as in bronchial pneumonia. The pulse is seldom faster than 90 or 100. It is often dicrotic. The pulse, therefore, enables one to distinguish psittacosis from pneumonia. Herpes labialis is seldom present. The nervous symptoms are marked. Albuminuria is often present. The blood culture was negative in every case in which it was made during the last epidemic. While the leukocytes usually vary between 5,000 and 6,000, leukopenia is not pathognomonic, for leukocyte counts up to 26,000 have been observed. The differential diagnosis must take into account influenza, typhoid and pneumonia. Psittacosis patients are pale and weak; their cheeks are not flushed and the respiratory silence is more typical than it is

1. Epidemiological Report of the Health Section of the Secretariat of the League of Nations for April 15, 1930.

in pneumonia. Since no absolutely pathognomonic symptom has been observed in psittacosis, knowledge of the etiology alone will indicate to the physician the real nature of the illness he has to combat.

## SUGAR CONSUMPTION, SUPPLY AND DEMAND

Any one who has carefully followed the advances in the science of nutrition during recent years must have been impressed by the influence that they have exerted on the dietary habits and food purchases of our population. There are factors other than science, however, that play a part in man's choice of his nutriment. Not the least of them are economic in character. The law of supply and demand comes into play, although it is sometimes markedly affected by political considerations. About a century ago the annual per capita consumption of sugar in the United States did not exceed ten pounds.[1] Meanwhile sugar has been greatly cheapened in cost as an article of commerce. A few centuries ago it sold for not less than the equivalent of several dollars a pound. Today a thousand calories in the form of pure sugar can be purchased at retail for less than five cents.

Along with this economic change has come an enormous increase in the use of this sweet. In 1926 the annual per capita consumption of refined sugar in the United States, according to the statistics of Willett and Gray, had reached the surprising figure of nearly 110 pounds. Despite all of the agitation in the public press, the antisugar cigaret advertising campaign, and the "reducing craze," the per capita consumption figure for the year 1929 is reported as more than 108 pounds, after a small decrease during the preceding two years. Mendel [1] has estimated the significance of such values in terms of our daily energy requirement. In 1917, before the United States entered the World War, sugar represented about 16 per cent of the calory intake of the country's population. Since then it has increased until sugar constitutes about one fifth of the requisite food intake. A small amount is used in nonfood industries; but eventually most of the 110 pounds finds its way in one form or another into human stomachs. Surprising as it may seem, the available or potentially available supply is so large that vigorous efforts are being made to augment the use of sugar. Political considerations are brought into play, Cuba, Porto Rico, Hawaii, the Philippines and the United States all presenting their offerings.

According to the latest report [2] of one of the largest sugar refining corporations, the country calls on the cane refineries for the refining of about 5,000,000 tons of raw sugar a year. The present capacity of these refineries, based on even daily meltings on a 300 working day year, is over 7,700,000 tons, or an excess capacity of more than 50 per cent of previous maximum requirements of the country. This excess capacity, in part, was called out by the war effort of the industry. The report adds that even if the consumption of the United States should increase at the average rate of 5 per cent annually, it is apparent that it would still take eight or ten years before consumption would employ the capacities of the refineries already built. Little wonder, then, that sugar is "seeking new worlds to conquer." Sugar began its dietary career as a condiment or food accessory—a sweetener rather than a nutrient. Its early use in connection with tea and coffee indicates this type of application. Today sugar enters abundantly into the nation's rations. Probably there is no better description of it than the widely quoted comment of the late E. E. Slosson: Common sugar is almost an ideal food. Cheap, clean, white, portable, imperishable, unadulterated, pleasant-tasting, germ-free, highly nutritious, completely soluble, altogether digestible, entirely assimilable, requires no cooking and leaves no residue. And then Slosson adds with physiologic wisdom: "Its only fault is its perfection. It is so pure that man cannot live on it."

1. Mendel, L. B.: Our Changing Food Habits, in Your Weight and How to Control It, edited by Morris Fishbein, New York, George H. Doran Company, 1927.
2. The American Sugar Refining Company Annual Report, 1929.

## PRODUCTION OF THERAPEUTIC FEVER BY SHORT RADIO WAVES

Fever has been defined as the result of a reaction occasioned by a variety of injurious influences acting on the body. The reaction is characterized by a moderate increase in the oxidative processes and consequent moderate increase in heat production, but more especially by such changes in the heat regulation as lead to disproportion between the heat production and the heat loss, and a consequent rise in body temperature. Despite the efforts of physicians throughout centuries to cure fever regardless of the disease with which it may be associated, the idea that the febrile condition represents a protective reaction of the organism has gained ground. In a lecture before the Harvey Society of New York in 1908, MacCallum [1] pointed out that it has again become usual to think of the fever as probably a beneficial reaction that should not be interfered with. He remarked that it is not perfectly evident why the heightening of the temperature of the body should be necessary, but it is easy to believe that under those circumstances the production of immune substances might proceed in a way impossible at a lower temperature. MacCallum expressed the conviction, accordingly, that the febrile process is advantageous to the organism and doubtless intimately associated with the development of protective substances to combat the injurious agencies that have invaded the body.

Interest in this field has become augmented in recent years by certain noteworthy developments in the treat-

1. MacCallum, W. G.: Fever, Harvey Lectures, 1908-1909, Philadelphia, J. B. Lippincott Company, 1910, p. 27.

ment of dementia paralytica. Thus, the studies of Wagner von Jauregg, indicating benefit derived from subjecting patients suffering from certain types of neurosyphilis to malarial infection, paved the way for superimposing acute febrile disease on chronic afebrile maladies. Not only *Plasmodium malariae* but also other microbiotic agents were employed to produce fevers in suitable patients. Again, foreign proteins have been injected with the object of developing febrile responses for curative purposes in certain diseases. Physical therapy has contributed various means of producing "artificial" fever, rather than hyperpyrexia of central origin, on the theory that it may be valuable to the diseased organism. Hot baths have an old history in physical therapy. Recently diathermic methods have been developed.

In a review of these developments, it has been remarked [2] that nonspecific protein therapy is hazardous because one is dealing with unknown factors and uncertain quantities. There are obvious dangers in the administration of a living virus; and the latter may even fail to affect immune persons. The physical methods thus far employed are time-consuming, difficult of application, not always easily controlled, and occasionally even dangerous. A procedure recently announced [2] from the research laboratory of the General Electric Company in Schenectady, N. Y., effects the elevation of body temperature by placing persons in the field of short radio waves. The energy is concentrated between two condenser plates, the heater consisting of a vacuum tube oscillator. The preliminary tests have shown that with the use of a 30 meter wave oscillating 10,000,000 times a second between the plates, with a variety of technical precautions, it is possible to cause a fever in man rapidly without great discomfort and to a degree high enough to be of presumptive value in therapy. Rectal temperatures of 105 F. and higher have been attained in from sixty to eighty minutes. Carpenter and Page report that there is an increase in rate of pulse and respiration which, in general, corresponds to the rise in temperature. The patients begin to show hyperpnea at 104 F. The systolic and diastolic arterial pressures are decreased when high temperatures are produced.

The method of producing fevers with the radio waves is still in the experimental stage, so that the therapeutic possibilities of this controllable febrile reaction must await further elaboration. On the assumption that therapeutic fevers can be produced in the future under nonhazardous conditions with foolproof apparatus, certain desirable applications may be anticipated. Two of these have been postulated by Carpenter and Page. First, the increased heat within the body may make a less favorable environment for the multiplication of a virus. Second, the heat may be expected to increase the rate of the chemical processes concerned with the development of immunity and with the general defense mechanism of the body against infectious agents.

2. Carpenter, C. M., and Page, A. B.: The Production of Fever in Man by Short Radio Waves, Science **71**: 450 (May 2) 1930.

## SELECTION OF DRUGS IN HOSPITALS

The hospital, as one factor in medical education, should afford unusual opportunities for enhancing rational drug therapy. There particularly may products be submitted to critical inspection. As Sollmann so pointedly remarked at the recent Congress on Medical Education, the "evaluation of therapeutic remedies is not usually among the features to which hospital authorities point with just pride of achievement." The hospital drug room, which reflects directly the medicinal requests of the staff, has hardly kept pace with the modernization of other departments of the hospital. As for proprietary medicines, the shelves often remind one of what Irons aptly terms the "chain drug-soda-fountain-lunchroom." In most medical colleges today, the student receives good courses in pharmacology, materia medica and therapeutics. He is taught about pharmacopeial drugs. The fallacies of shotgun prescriptions are frequently emphasized. More than five thousand copies of New and Nonofficial Remedies are used annually by class A colleges in order that medical students may know what nonofficial remedies are worth while. Although proprietaryism has at times imposed evils on the profession, sight must not be lost of the fact that progress in drug therapy is rapid and that the physician must use the new drugs, which most frequently are proprietary. The really valuable products are introduced only after critical examination and are sold in accordance with the procedure established by the Council on Pharmacy and Chemistry. Thus the medical graduate may exercise, if he will, good judgment in the matter of selection of drugs.

Unfortunately, progressive "teaching" methods are not carried out in the hospital where the graduate is an intern. Not infrequently, irrational fixed prescriptions are written by the "chief" of a service, who in turn may have had them bestowed on him when he was an intern. The staff physician may carelessly prescribe a drug under a name he remembers best. Frequently drugs continue to be prescribed under their proprietary names long after pharmacopeial preparations have become available. Thus the official drug methenamine may be ordered by one of its aliases—also more costly—such as urotropin or formin.

Competition introduces other evils. Each pharmaceutic house, for instance, has an hypnotic of the barbital series; about fifteen are on the American market. These hypnotics in general differ little in therapeutic effect but add materially to the hospital drug list and expense. They also cause the prescribing physician or intern to lose sight of the official, nonproprietary barbital or phenobarbital. Interns are likely also to acquire such habits of prescribing from attending men.

Many of these objectionable drug practices were emphasized recently by E. E. Irons.[1] One of the suggestions which he offered to mitigate the bad habits of proprietary prescribing in hospitals is the issuance of a hospital manual. This, he believes, should contain hospital rules and a formulary, suitably interleaved for the insertion of special rules and formulas of merit desired by individual hospitals. The Council on Medical Education and Hospitals, in cooperation with the Council on Pharmacy and Chemistry, is following up the suggestion and considering the preparation of such a manual. This will furnish interns with helpful, disinterested information, approved by hospital staffs. The correction of bad habits in prescribing will go far toward eliminating confusion, improving medical education of interns and nurses, and finally aid economically those most affected—the hospitalized public.

### EXPERIMENTAL NEPHROSIS

The genesis of the pathologic changes in the kidneys that are associated with different types of renal disorder remains obscure. It is well known that certain drugs, notably toxic agents such as some of the heavy metals, may lead to degenerative changes of a serious character. Thus, uranium salts have been employed experimentally to bring about kidney defects in animals. The possible rôle of bacteria and their toxins as factors injurious to the renal structures is generally admitted by students of focal infection. The details of the pathogenesis remain for the most part to be elucidated. Considerable interest has been centered of late in the condition that is currently designated as nephrosis. The latter is signally different from many of the long familiar types of nephritis, notably in respect to the low content of serum protein that characterizes the disorder attended with marked albuminuria. The clearer appreciation of some of the peculiarities of nephrosis has led clinicians to question the wisdom of certain therapeutic measures, notably the restriction of protein intake, that have been employed rather indiscriminately in the management of patients with renal disorder.

An interesting experimental investigation conducted at the Harvard University Medical School by Barker and Kirk [2] seems destined to advance our understanding of nephrosis and its complications. They produced a low proteinemia in animals by repeated plasmapheresis; that is, by the surgical removal of blood, the separation of its corpuscles by centrifugation, and the return of the latter (without the serum) suspended in suitable saline solution. This is an effective means of depleting the body of its serum proteins without interfering fundamentally with the oxygen-carrying or respiratory functions of the blood. Repetition of the process brought about edema varying from slight changes in the extremities to generalized anasarca. No changes occurred in the blood pressure or the renal functions. The basal metabolic rate was decreased with the depletion of the blood serum.

Most significant, however, is the observation that renal pathologic changes were produced experimentally by a low proteinemia, as shown by the appearance, in the urine, of albumin, granular casts, fat droplets and products of renal cell degeneration; and there were definite evidences of degeneration of the renal tubules, destruction of glomeruli and scar tissue formation. The phenomena recall some of the manifestations of nephrosis in man; namely, oliguria, albuminuria, relatively noncellular urine sediment, edema, normal renal function as measured by special tests, usually normal blood pressure, a lowered basal metabolism, and the chemical blood picture already referred to. Barker and Kirk interpret their investigations on animals as supporting the theory that the continual loss of albumin in the urine is sufficient to produce renal pathologic changes. Nephrosis attends early kidney alterations that are predominantly tubular in character. Presently, however, the condition may alter. The blood pressure increases, the heart enlarges, changes in the eyegrounds occur, the renal function tests are less favorable, the blood urea nitrogen increases, the urinary output of albumin diminishes, casts and cellular elements increase, edema disappears, and the disease picture gradually passes from one of tubular nephritis to one of glomerular change. Death from uremia is foreshadowed. In the end, Barker and Kirk point out, the pathologic change in the kidney becomes one of a chronic mixed or diffused nephritis with marked tubular, glomerular and interstitial changes.

1. Irons, E. E.: Selection of Proprietary Versus Nonproprietary Drugs in Hospital Prescribing, J. A. M. A. **94**: 1272 (April 26) 1930.
2. Barker, M. H., and Kirk, E. J.: Experimental Edema (Nephrosis) in Dogs in Relation to Edema of Renal Origin in Patients, Arch. Int. Med. **45**: 319 (March) 1930.

## *Current Comment*

### THE PHYSIOLOGIC EFFECTS OF RATTLESNAKE VENOM

Death from snake bite is still sufficiently common to warrant detailed study of the nature of the intoxication. According to do Amaral [1] the death rate, which is high in certain countries, can be considerably reduced by serum therapy. Thus the use of antivenins in Brazil, where two decades ago the number of persons dying from snake bites every year was estimated to be about 5,000, has materially reduced the mortality. The results in this country also are said to be encouraging. A recent study of the physiologic action of rattlesnake venom, commonly termed crotalin, by Essex and Markowitz [2] at the Mayo Foundation, indicates that it is different from the action of other venoms in some respects. When the poison of rattlesnakes is introduced into the circulation there ensues a remarkably sharp,

1. Do Amaral, A.: Venoms and Antivenins, in Jordan, E. O., and Falk, I. S.: The Newer Knowledge of Bacteriology and Immunology, University of Chicago Press, 1928.
2. Essex, H. E., and Markowitz, Jacob: The Physiologic Action of Rattlesnake Venom (Crotalin), Am. J. Physiol. **92**: 317, 329, 335, 342, 345 (March) 1930.

profound drop in blood pressure to a level characteristic of shock. Earlier investigators also have reported the similarity between crotalin shock and anaphylactic shock. The researches have shown that the pressor effect is not central in origin, nor is the heart primarily involved. It occurs in the absence of the viscera and is probably peripheral in character. The hemolytic effects of venoms have long been known. Essex and Markowitz have demonstrated anew that hemolysis from rattlesnake venom is due to the expansion of the erythrocytes, with accompanying injury to their membranes. This is analogous to the reported effect of saponin on human erythrocytes. Observations on lower forms of life indicate that crotalin is a poison killing protoplasm wherever a contact is made with it: This helps to explain why snake venoms have been reported to include cytolysins that destroy bacteria, hemolysin, hemorrhagin, neurotoxin, and other comparably potent substances. The experiments in Minnesota indicate that blood pressure can be used as a satisfactory criterion for the degree of immunity acquired by an immunizing process. Apparently the latter is of comparatively short duration.

# Association News

## ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

*Twenty-Sixth Annual Meeting, held in Chicago, Feb. 17, 18 and 19, 1930*

*(Continued from page 1607)*

### COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 19—AFTERNOON

*HOSPITAL DEPARTMENTS OF RADIOLOGY*

#### The X-Ray Department of a Teaching Hospital

DR. JAMES T. CASE, Chicago: The purpose of a department of radiology in a teaching hospital should be to furnish appropriate assistance in the routine examinations and therapeutic management of patients; to participate in staff conferences; to contribute to the instruction of interns and undergraduate students on the application of radiology to the problems of diagnostics and therapy—on the possibilities as well as the limitations of the roentgen-ray aid; to help in various research problems as they arise, and to assist in postmortem examinations.

The hospital management should not look on the radiologic department as a profitable investment, and it should not be the aim of the department to contribute to the financial standing of the institution until all the foregoing objects have been achieved. In order to meet these aims, the physical equipment of the hospital should include standardized x-ray equipment for radiography and fluoroscopy and for x-ray therapeutic work, housed in rooms of sufficient size to permit demonstrations to students and interns. The personnel must include a medical radiologist, with such physician and lay assistants as the volume of the work demands. The hospital management must not look on the radiologic department merely as a photographic center for the production of pictures to be interpreted by the various surgeons, internists or other specialists who may have ordered the x-ray studies.

#### The Requirements of a Department of Radiology in a Large Municipal Teaching Hospital

DR. P. F. BUTLER, Boston: In the organization of the radiologic laboratory of the large municipal hospital there must be a chief radiologist, medical assistants, medical interns, technicians, nurses and clerks, depending on the size of the clinic. The installation of apparatus should be supervised by a radiologist who is conversant with all the requirements and dangers of the work. The location of the department should be central in the hospital plant, so as to be readily available to all other parts of the institution.

The first concern of the radiologist must be the safety of the patient. All treatments must be supervised by one of the radiologists, who understands the dangers. All workers with roentgen rays or radium should have ample time off from duty. One month each year is not too much. They should be instructed to spend as much time as possible out in the sunlight.

The tendency to send patients for roentgen study before the clinical data have been accumulated is wrong. It lessens the diagnostic acumen of the referring physicians, especially the younger men. It requires the x-ray department to make many unnecessary examinations and hence is an expensive waste of time and material. The principal means of cutting down expenses is by eliminating unnecessary examinations, which are the greatest cause of needless expenditure.

Up to a short time ago there was more or less difficulty in obtaining high class interns who wished to take up radiology as a specialty. An intern in radiology should receive at least one year's training. He should preferably be a hospital graduate. His time should be carefully laid out so that after learning the fundamentals he gradually works up and through all the divisions of the work.

Teaching should be done in all municipal hospitals. Few medical schools give this specialty the amount of time or attention in the curriculum to which it is entitled. Teaching is usually done under one of the other branches of medicine. Radiology should have a department of its own. As the specialty of radiology is one of the youngest of the medical sciences, the need and opportunity for research is unlimited.

#### The Requirements of a Department of Radiology in a Small Hospital

DR. H. J. ULLMANN, Santa Barbara, Calif.: The first requirement for a department of radiology is to obtain the services of a competent radiologist. The director should be chosen and given as much latitude as possible in deciding not only on the type of apparatus but also on the organization, personnel and operation of the department, for which he should be held responsible. To obtain a competent director, it is necessary to offer him not only reasonable financial compensation but satisfactory physical and professional inducements as well. Of even more importance than the physical are the professional inducements. There is nothing more discouraging to a roentgenologist, especially if he is young, than to be considered by the members of the staff as no more than a high-grade technician. No roentgen department can do its duty to its patients or its hospital until the staff members will consider their director a colleague, who acts as a consultant when the x-rays are used, and the laboratory as one, and only one, of the means required to enable them to arrive at a correct diagnosis.

The question of the financial arrangements with the director is often a stumbling block to satisfactory service. In principle, the arrangement should be such that the hospital receives enough from the fees to cover all carrying charges, including the replacement of obsolete equipment. It should not expect to make a handsome profit from the department any more than it would from the operating room. A department equipped by the director at his own expense, and in which, therefore, all fees are necessarily collected by him, becomes, as a rule, essentially unsatisfactory.

#### The Relation of a Hospital Department of Radiology to the Private Radiologist

DR. L. R. SANTE, St. Louis: No radiology department, no matter how elaborately equipped, can give adequate service to its clientele, or render proper aid to the hospital physicians depending on it, unless it is in charge of a competent trained radiologist.

There is no doubt that radiologic and other modern methods of examination and hospitalization have greatly increased the cost of medical care, but have not the results bountifully justified the expenditure? As our knowledge of the treatment of disease increases, we may expect the cost of medical care to become still higher. This need cause no alarm, however, since the improved economic condition of the public will more than offset the increased demand on its resources from this as well as all other sources. A recent tendency of some institutions is to install young men, on small salaries, fresh from their hospital internship without practical medical background or adequate radiologic training, as heads of hospital radiologic departments to pass their opinions on matters vital to the welfare of the patient and to consult with established practitioners, seasoned in the practice of medicine. This is an insult to the intelligence of the physician and an injustice to the patient. This effort by lay hospital boards to reduce the cost of medical care at the expense of the radiologist will be found a dearly purchased economy.

The radiologist should properly be considered a consultant and all his relations with the medical profession should be considered in the nature of consultations. He should be given a position on the same footing as the rest of the staff in keeping with the dignity of his position, in order that he may retain their respect and secure their full cooperation. He should be actual director of his department, not director in name only. A certain amount of clinical investigation should be permitted and encouraged. His compensation should be commensurate with the responsibility of his position and should equal that which he could reasonably expect from similar service in his own private laboratory. The hospital radiology department should confine its activities to persons entered in the hospitals as patients who by reason of their infirmities are unable to consult a physician in his office or to be treated in their homes.

### DISCUSSION ON PAPERS OF DRS. CASE, BUTLER, ULLMANN AND SANTE

DR. M. J. HUBENY, Chicago: The thing I should like to bring up is the question of institutional medicine. I cannot see anything else but institutional medicine. The evolution will be slow and gradual, but in the final analysis it depends essentially on the services we are going to render and our ability to render that service. It would appear to me that there are going to be three kinds of institutions, first, institutions supported by taxation; second, institutions supported by some form of endowment, and, third, institutions owned by physicians. The hospital is primarily used for therapeutic purposes. An evolution is taking place. It is now being used for diagnostic measures as well. I think the essential reason is that in the hospital we have instruments of precision. Several types of people are going to use those instruments: (1) the novice, who knows little or nothing about it; (2) the general man who pretends to know something about it and really becomes a little more efficient with the apparatus than without it; (3) the man who is expert in it. Institutions vary. There is, for instance, the keystone institution, such as the University of Chicago. It is really giving all its efforts to research work. Ultimately institutions that are giving all their time to research work are going to serve the community to the highest degree of efficiency. Many of our difficulties are intrinsic. In a great measure the medical profession itself is responsible for the tardy recognition of the roentgenologist. A man must have a certain amount of ability. The ability usually is commensurate with the amount of money he gets. Secondly, he must have great capabilities. Next, he must have the ability to adjust himself under varying circumstances. He must be able to get along with conflicts as well as to avoid them. The final analysis will be made in conformity with the high ideals that roentgenologists have attempted to work out.

DR. R. A. ARENS, Chicago: I believe that the outside practice of men working in hospitals is justifiable, provided it is done on a fair basis, when they do not use the hospital to cut down the fee of the private practitioner. It hardly comes within our province to designate what portion of income the hospital shall take as its own. If the roentgenologist gets a fair business proposition and medical privileges, that is all he can demand.

DR. IRWIN D. METZGER, Pittsburgh: Sixteen years ago an intern law was passed in Pennsylvania which the licensing board was required to make effective. The purpose of the intern law was to educate prospective physicians for the state. The Department of Public Instruction tells us that more than half the practicing physicians in Pennsylvania have gone through these courses, so that more than half of the 13,000 physicians in Pennsylvania have had training in hospitals, and they naturally will reflect to a large extent the type of training which they received in these hospitals. We conceived the idea that the purpose of any internship was primarily that of serving an apprenticeship in medicine. Each student ought to have an opportunity of receiving practical training in every department of medicine. Among other things it was necessary to see that there was a laboratory in the hospital approved for this purpose, and that some one who was competent would supervise the work. Therefore we said, "There shall be a physician at the head of this laboratory, and he shall be a member of the staff, so that his educational influence may be felt in the staff itself." We said, also, "There shall be an x-ray department properly equipped and manned so that it may give a good training for the intern. The one that heads this department shall be a physician licensed in the state of Pennsylvania. He shall have charge of the laboratory and he shall supervise the work." Naturally, he should be paid adequately for the time he gives. We require something of which every one may not approve, a technical knowledge of the machine and of the work in addition to a fair training in plate reading. We do that not to make roentgenologists out of them at all, but that they may have the training that will give them an idea of the needs and the possibilities of any department. We think we make out of them safe and sane physicians. All the approved hospitals, about a hundred, are attempting in every possible way to carry out the things these speakers have been telling us.

*(To be continued)*

## THE DETROIT SESSION

### Banquets

Dr. Frank Billings will be the guest of honor at a banquet to be given by alumni of Rush Medical College at the Statler Hotel in Detroit, Wednesday, June 25, at 7 p. m. Moving pictures of the old Rush Medical College and of the new University of Chicago medical buildings, of the faculty and of the alumni will be shown.

The Alpha Omega Alpha Honorary Fraternity will hold a banquet at the Statler Hotel at 6 p. m. Thursday, June 26, at which Dr. William J. Mayo will be the principal speaker and guest of honor.

## MEDICAL BROADCAST FOR THE WEEK

### American Medical Association Health Talks

The American Medical Association broadcasts at 10 o'clock, daylight saving time, Monday, Wednesday, Thursday and Saturday; at 10:15 on Tuesday, and 9:45 on Friday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of June 2-7 is as follows:

**June 2. A Child Is to Be Born.**
**June 3. The Menace of Malnutrition.**
**June 4. Sea Bathing.**
**June 5. Snakes and Snake Bites.**
**June 6. Snakes and Snake Bites.**
**June 7. The Medicine of the Sun.**

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05, daylight saving time.

The program for the week is as follows:

**June 2. Swatting the House Fly.**
**June 3. The Twin of the Century.**
**June 4. Running Ears.**
**June 5. Fads and Facts About Diet.**
**June 6. Food Fallacies.**
**June 7. Steering Children Straight.**

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## CALIFORNIA

**Personal.**—Dr. Paul H. Stevenson, Peiping Union Medical College, Peiping, China, will give a course in general anthropology at the University of California, June 30-August 9.—— The Latvian government recently conferred the Latvian jubilee medal, with pertinent diploma, on Dr. Thomas J. Orbison, Los Angeles.

**State Medical Election.**—At the annual meeting of the California Medical Association, April 30, Dr. Lyell C. Kinney, San Diego, was installed as president, and Dr. Junius B. Harris, Sacramento, as president elect; Dr. Emma W. Pope, San Francisco, was reelected secretary. The next annual session will be held at San Francisco, April 27-30.

**Report of Board of Medical Examiners.**—Licenses issued by the board of medical examiners to fifty-four applicants during March brought the total number of licentiates to 11,362. There were fifty investigations of complaints against practitioners, with twenty of these still pending completion at the end of the period covered by this report. Ten convictions resulted from twelve prosecutions. Fines assessed in the courts amounted to $210.

## COLORADO

**Dr. Sewall Honored.** — It was announced at the annual meeting of the National Tuberculosis Association, May 7, that Dr. Henry Sewall, Denver, has been awarded the Trudeau Medal for "meritorious service in the incessant struggle to rid mankind of tuberculosis." A dinner was tendered Dr. Sewall by the board of managers and the medical advisory board of the National Jewish Hospital at Denver, May 26, in honor of his seventy-fifth birthday.

## DISTRICT OF COLUMBIA

**Medical Election.**—At the annual meeting of the Medical Society of the District of Columbia, May 7, Dr. William H. Hough, Washington, was installed as president, and Dr. Coursen B. Conklin, secretary, reelected. The next annual session will be held in Washington, May 6, 1931.

**Personal.**—Dr. Luther H. Reichelderfer was elected president of the Board of Commissioners of the District of Columbia, April 10.——Surg. Gen. Hugh Cumming, U. S. Public Health Service, was recently made an honorary member of the National Academy of Mexico.——Dr. Wallace M. Yater has assumed the chair of medicine in Georgetown University School of Medicine, Washington, succeeding the late Dr. Wilfred M. Barton; he will continue to act as chief of medical clinics at the hospital.

## FLORIDA

**State Medical Election.**—The newly elected officers of the Florida Medical Association for the ensuing year will be as follows: Drs. Julius C. Davis, Jr., Quincy, president; Walter C. Payne, Pensacola; William H. Spiers, Orlando, and Mathew J. Flipse, Miami, vice presidents, and Shaler Richardson, Jacksonville, secretary.

## ILLINOIS

### Chicago

**Summer Clinics.**—Summer clinics sponsored by the Chicago Medical Society will be given at the Cook County Hospital, August 11-22. It is also announced that, beginning May 24, the pathologic conferences conducted by Dr. Richard H. Jaffe at the Cook County Hospital are to be published in the *Bulletin* of the Chicago Medical Society. The new volume begins with the July 5 issue. The subscription price to those who are not members of the Chicago Medical Society is $2 a year.

**Society News.**—Walter H. Eddy, Ph.D., professor of physiologic chemistry, Teachers College, Columbia University, addressed the Medical Research Club of the University of Illinois, May 16, on "Present Status of Vitamin B."——The Chicago Ophthalmological Society was addressed, May 19, among others, by Dr. Samuel G. Higgins, Milwaukee, on "The Closure of the Cataract Incision."——The Chicago Gynecological Society was addressed, May 29, by Drs. Louis Rudolph and Andrew C. Ivy on "Coordination of the Uterus in Labor"; Prof. E. H. Zweifel, Munich, Germany, presented new obstetric forceps and a motion picture of obstetric operations. ——Dr. Elizabeth Helene Schirmer will address the Chicago Council of Medical Women, June 6, on "The Physiologic Reaction as a Test for Pregnancy." —— The Chicago Urological Society was addressed, May 22, by Drs. Edward Hollingsworth, Hines, Ill., on "Arteriovenous Fistula of Renal Vessels Following Nephrectomy"; Harry C. Rolnick and Hymen J. Burstein, "Perinephric Abscess—Review of a Series of Cases," and Joseph S. Eisenstaedt and Tyrrell G. McDougall, "Diverticula of the Bladder."——Dr. Francis J. Gerty addressed the Chicago Neurological Society, May 23, on "Progressive Lipodystrophia."——The Chicago Society of Internal Medicine was addressed, May 26, by Arthur H. Steinhaus on "Influence of Exercise on the Basal Metabolism"; Dr. Jerome R. Head, "Action of the Intercartilaginous Muscles," and Dr. George M. Curtis, "Hypochloremia."

## IOWA

**Society News.** — Dr. Austin C. Davis, Rochester, Minn., addressed the Cerro Gordo County Medical Society, April 15, on hyperthyroidism. —— The April meeting of the Johnson County Medical Society was addressed by Drs. George H. Scanlon, Iowa City, on "Reduction of Fractures under Local Anesthesia" and Clarence E. Van Epps, Iowa City, on "Diagnostic Importance of Visual Defects in Neurology."——"Modern Treatment of Goiter" was the subject of Dr. Christian J. Luginbuhl, Des Moines, before the Mahaska County Medical Society, April 24, and "Bronchoscopy" that of Dr. Dean M. Lierle, Iowa City; Dr. Frederick A. Hecker, Ottumwa, spoke on his experimental work in cancer.——The Marion County Medical Society was addressed, April 8, by Drs. Hiram B. Henry, Des Moines, and Samuel T. Gray, Albia, on "The Psychoneurotic State" and on "The Basic Science Law."——Drs. F. O. Woodard and Oliver J. Fay, Des Moines, presented a joint lecture on "Brain Concussion in Compensation" before the Polk County Medical Society, April 29.——The Palo Alto County Medical Society was addressed, April 3, in Emmetsburg, by Dr. Paul O. Nelson, Ayrshire, on "Growth and Development of Diabetic Children Before and During Adolescence."——The Washington County Medical Society was addressed in April by Dr. Paul A. White, Davenport, on "Considerations Regarding Hyperthyroidism: Postoperative Results in 100 Cases."——Dr. Louis A. Buie, Rochester, Minn., addressed the Woodbury County Medical Society, April 29, on "What the General Practitioner Should Know About Proctology."

## MAINE

**Personal.** — Dr. William H. Bradford, for forty years actively associated with the Maine General Hospital, Portland, has resigned as chief of the surgical staff and been transferred to the consulting staff. Dr. Carl Merrill Robinson, Portland, will succeed Dr. Bradford. —— Dr. Philip Webb Davis has resigned as a member of the staff of the Maine General Hospital after twenty-seven years' service.

**Society News.**—A symposium on mortalities was presented before the Kennebec County Medical Association at Augusta, May 8, by Drs. Herbert E. Thompson, Bangor, Arthur H. McQuillan, Waterville, and George A. Coombs, Augusta. A symposium on syphilis was recently conducted before the society by Drs. Benjamin B. Foster, Portland, Matthias Marquardt, Alfred G. Long and William L. Holt, Augusta.

**Bonuses for Physicians to Locate.**—There are said to be 226 small towns and sixty-five organized plantations in Maine that have no resident physician. There is an average of one physician for 916 inhabitants. To provide more adequate medical service, it is reported, many of the towns are offering bonuses, ranging from $500 to $3,500, to young physicians who will settle and take up the rural practice.

## MARYLAND

**Research on Psittacosis at Curtis Bay.**—A laboratory has been established at the U. S. Quarantine Station at Curtis Bay for research on psittacosis, and to find methods of combating the disease, by Dr. Charles Armstrong of the U. S. Public Health Service. Only persons who have had the disease will be permitted to carry on the experiments.

## MASSACHUSETTS

**State Medical Meeting at Plymouth, June 17-18.**—The one hundred and forty-ninth annual meeting of the Massachusetts Medical Society will be held, June 17-18, at Plymouth, with headquarters in the Plymouth Memorial Building. The

guest speakers will be Drs. Walter T. Dannreuther, New York, on "Some Useful Office Procedures in Gynecologic Therapy"; Isaac Gerber, Providence, R. I., "Radiologic Treatment of the Thyroid"; Harold D. Corbusier, Plainfield, N. J., "Physiotherapy as Applied to Orthopedic Practice"; William L. Clark, Philadelphia, "Indications for the Use of Electrosurgical Methods." Dr. Henry A. Christian, Boston, will deliver the annual discourse on "The Practitioners' Need of an Intelligent Skepticism," and Dr. William Irving Clark, Jr., Worcester, the Shattuck Lecture on "Industrial Medicine and Public Health."

## MICHIGAN

**Personal.**—Dr. Robert L. Dixon has been appointed medical superintendent of the Michigan Home and Training School at Lapeer to succeed Dr. William J. Kay, recently deceased. Dr. Dixon has been superintendent of the Michigan Farm Colony for Epileptics, Wahjamega, for sixteen years.—— Dr. Isaac L. Polozker, Detroit, has been appointed director of the psychopathic clinic by recorder's court judges, succeeding Dr. Theophile Raphael, who resigned to take charge of the research clinic connected with the health service at the University of Michigan.

## MINNESOTA

**Society News.**—Dr. Franklin R. Wright, Minneapolis, recently addressed the Hibbing County Medical Society on venereal diseases.——Dr. Naboth O. Pearce, Minneapolis, addressed the Rice County Medical Society at Faribault, April 23, on "Pediatrics."——The Stearns-Benton County Medical Society was addressed, April 17, by H. L. Gorneflo, St. Cloud, on "Medical Economics"; Dr. Francis J. Savage, St. Paul, "Medical Legislation," and Dr. George A. Earl, St. Paul, "Public Health."

## MISSISSIPPI

**State Medical Election.**—At the annual meeting of the Mississippi State Medical Association in Vicksburg, May 13-15, Dr. Ewing F. Howard, Vicksburg, was installed as president; Dr. John C. Culley, Oxford, was made president elect; Drs. Charles W. Patterson, Rosedale, Matthew J. L. Hoye, Meridian, Lonney L. Polk, Purvis, were elected vice presidents, and Dr. Thomas M. Dye, Clarksville, secretary, reelected. The next annual meeting of the association will be held in Jackson, May 12, 1931.

## NEW MEXICO

**State Medical Meeting at Raton, June 4-6.**—The forty-eighth annual meeting of the New Mexico Medical Society will be held at Raton, June 4-6. The program includes papers by Drs. Orville H. Brown, Phoenix, Ariz., on "Food Sensitizations and Their Treatment"; Frank N. Allan, Rochester, Minn., "Treatment of Diabetes"; Clarence B. Francisco, Kansas City, Mo., "Management of Industrial Injuries"; John B. Hartwell, Colorado Springs, Colo., "Diagnosis and Treatment of Fractures of Transverse Processes of Lumbar Vertebrae"; Mark L. Bishoff, Topeka, Kan., "Treatment in Shock"; James F. Percy, Los Angeles, "Cautery Treatment of Carcinoma Above the Clavicle," illustrated; Arthur E. Hertzler, Halstead, Kan., "Diagnosis of Osteomyelitis"; Frederick E. Diemer, Denver, "Surgical Treatment of Peptic Ulcers"; Frederick M. Heller, Pueblo, Colo., "Physiologic and Clinical Aspects of Kidney Disease"; Walter F. Martin, Battle Creek, Mich., "Urologic Problems of Interest to the General Practitioner"; Donald G. Tollefson and Edward C. Moore, Los Angeles, "Hysterectomy, a Technic (Analysis of 604 Cases)"; John W. Cathcart and Claude H. Mason, El Paso, "X-Ray Diagnosis of Bone Tumors," illustrated; William T. H. Baker, Pueblo, Colo., "Tumors of the Female Breast"; Percy G. Cornish, Jr., Albuquerque, "Intrapleural Pneumolysis," illustrated; Stuart Pritchard and James K. M. Gordon, Battle Creek, "Significance of Blood Spitting"; Robert J. Groom, Santa Rita, "Vincent's Infection," and James W. Hannett, Albuquerque, "Treatment of Injuries to the Cranial Contents."

## NEW YORK

**Society News.**—The Syracuse University College of Medicine will hold a medical alumni reunion, June 5-6; one of the features this year will be a "medical show" dedicated to the "medics."——The annual Conference of Health Officers and Public Health Nurses will be held, June 23-25, at Saratoga Springs. Among the speakers will be Drs. Matthias Nicoll, Jr., Albany, on "Building a County Health Department"; C. Ward G. Crampton, New York, "The Periodic Health Examination," and Homer Folks, LL.D., New York, "The Future of Antituberculosis Work."

### New York City

**Society News.**—The Medical Society of the County of Kings was addressed, May 20, by Drs. Shirley W. Wynne, commissioner of health, on "Cooperation Between the Health Department and the Private Physician"; John G. W. Greeff, commissioner of hospitals, "The City Hospital," and William Schroeder, Jr., chairman of the sanitation commission, "Relationship of Sanitation Problems to the Health of Greater New York."——"Recent Advances in Food Chemistry, with Particular Reference to the Vitamins" was the subject of Henry C. Sherman, Ph.D., professor of chemistry, Columbia University, before the Brooklyn Society of Internal Medicine, May 23.

**Health Standards of Preschool Children.**—Health Commissioner Shirley W. Wynne, in speaking before the New York Academy of Medicine, May 1, advocated the establishment of a "Children's Health Hour" one day a week to be held by each of the 12,000 practitioners in the city. Dr. Wynne estimated that there were 400,000 children of preschool age in New York City. During the second year, deaths from pneumonia, measles, diarrhea, tuberculosis and whooping cough reach 70 per cent, and by the fifth year accidents constitute 20 per cent of the deaths, and pneumonia and diphtheria each more than 15 per cent. His plan is to have all physicians fill out record cards and pledge the charge of a reasonable fee for a special children's service. When the parents have no regular physician, the names of three in their neighborhood are given for choice. The plan would bring patients and physicians together, so that the child will not have to wait for definite sickness to receive medical attention.

## OHIO

**State Medical Election.**—At the annual meeting of the Ohio State Medical Association, May 15, Columbus, Dr. Daniel C. Houser, Urbana, was made president elect; Dr. Chester W. Waggoner, Toledo, was installed as president, and Mr. Don K. Martin, Columbus, executive secretary, reelected. The next annual session of the association will be held in Akron. Dr. Henry Lee Wenner, Jr., Toledo, won the annual golf tournament with a score of 114 for twenty-seven holes.

**Society News.**—The Wood County Medical Society was addressed at Bowling Green, recently, by Dr. Erastus Benjamin Gillette, Toledo, on "Pitfalls in the Diagnosis of Right Sided Abdominal Pain."——Dr. Cassius M. Shepard, Columbus, addressed a recent meeting of the Ross County Academy of Medicine, Chillicothe, on "The Alleged High Cost of Medicine or Medical Attention."——The Alumni Association of the College of Medicine of Cincinnati will hold its annual reunion, June 13-14. A special feature this year will be a golf tournament, which will be held on Friday at the Hyde Park Country Club; trophies will be awarded to winners.

## OREGON

**Licenses Revoked.**—The license to practice medicine of Dr. Charles H. Rogers, Portland, was revoked, January 8, on account of unprofessional and dishonorable conduct. The license of Dr. Ella K. Dearborn, Portland, was revoked, May 5, 1930, on a similar charge.

**Society News.**—Physicians of Hood River recently formed the Hood River Medical Association; Dr. Howard L. Dumble was elected president, and Dr. Claude C. Chick, secretary.—— The Portland City and County Medical Society was addressed, May 21, by Drs. Blair Holcomb and Matthew C. Riddle on "The Surgical Diabetic" and "Treatment of Pernicious Anemia," respectively.

**Child Guidance Clinic at Portland.**—At a meeting of the Portland Child Guidance Clinic Association in May, articles of incorporation of the association were completed and plans formulated for the establishment and maintenance of a child guidance clinic. The association is formed for the purpose of establishing facilities in Portland for the study and relief of conditions arising from mental abnormalities in children. The clinic comprises a personnel consisting of a psychiatrist, a psychologist, social service workers and clinical aid; it will be conducted in close cooperation with the public schools and the juvenile court, as well as with the medical school, to afford general physical examination and treatment to those whose physical disease may contribute to mental delinquency. As soon as practicable, the clinic will be established in the new clinic building of the University of Oregon Medical School, where special rooms are provided assuring proximity and accessibility of other clinics in general diseases of children. The clinic also affords opportunity for the development of the department of psychiatry in the medical school. The expense will be met partly by appropriations from the school board, the court of

domestic relations, the medical school and other organizations and partly by subscriptions to membership in the association, endowments and private gifts and benefactions.

## PENNSYLVANIA

**Fund to Encourage Medical Education.**—A fund was recently established to promote advanced medical education and research in the United States, and to stimulate and train teachers in medicine and surgery. Special attention is to be paid to diseases of unknown etiology. There are also to be established scholarships to defray the expense in part or in full of the tuition of physicians at the New York Post-Graduate Medical School and Hospital, and a part of the income is to be used to provide salaries for scientific workers in medicine and surgery, to establish prizes for valuable contributions to medical literature, or in any other manner to promote graduate medical education. The donor of the fund, Mrs. Edith Oliver Rea, Swickley, Pa., has specifically petitioned that practicing physicians of Allegheny County, Pa., be given preference. Names of really deserving physicians whose responsibilities would otherwise make it difficult for them to meet the whole cost of graduate study shall be recommended. The committee in charge of the distribution of these scholarship aids consists of Drs. Ludwig W. Kast, chairman, James F. McKernon and Edward H. Hume, all of New York and all members of the board of directors of the New York Post-Graduate Medical School and Hospital, which institution has the fund at its disposal. The fund will be known as the Oliver Rea Scholarship Fund.

### Philadelphia

**Personal.**—John V. Mershon, D.D.S., formerly head of the orthodontic department of the University of Pennsylvania, was awarded the Jarvie Medal by the New York State Dental Society in New York, May 14. It is an annual award for distinguished service to dentistry. The medal carries with it a fellowship in the New York State Dental Society.——Dr. William W. Keen has been appointed honorary president of the Da Costa Foundation, recently established in honor of Dr. John Chalmers Da Costa for the graduate education of physicians; the goal set for the new organization is $100,000.

**Society News.**—Dr. Lawrence Goldbacher addressed surgeons of the U. S. fleet on board the U. S. hospital ship *Relief*, anchored in the Hudson River, New York, May 16; his subject was "Injection Treatment of Hemorrhoids and Pruritus Ani."——"Normal Blood Pressure" was the subject of Dr. Francis Ashley Faught, May 23, in the series of graduate seminars of the Philadelphia County Medical Society.——The Nathan Lewis Hatfield Lecture was delivered by Dr. Franz Alexander of Berlin, May 21, on "A General Discussion of Psychoanalysis with Emphasis on Recent Investigations of Character Formation."——The Philadelphia Neurological Society was addressed, May 23, by Drs. William G. Spiller on "Clinical Evidence of the Existence of a Pupillary Center in the Oculomotor System" and Samuel W. Miller, Lancaster, "Traumatic Ventricular Pneumatocele."——A demonstration in the diagnosis and treatment of heart disease was given by the Philadelphia Heart Association, May 19-22; the instructors were members of the staffs of Jefferson Medical College, University of Pennsylvania School of Medicine, Temple University and others.

## SOUTH CAROLINA

**State Medical Election.**—At the annual meeting of the South Carolina Medical Association, May 6, Dr. Kenneth M. Lynch, Charleston, was installed as president, and Dr. Charles A. Mobley, Orangeburg, president elect. Dr. Edgar A. Hines, Seneca, is secretary, reelected. The next annual meeting will be held in Greenville in April.

## TENNESSEE

**Health at Memphis.**—Telegraphic reports to the U. S. Department of Commerce from sixty-five cities with a total population of 30 million, for the week ended May 17, indicate that the highest mortality rate (24.1) appears for Memphis, and that the mortality rate for the group of cities as a whole is 12.3. The mortality rate for Memphis for the corresponding week last year was 15.1, and for the group of cities, 13.3. The annual rate for sixty-five cities is 13.8 for the twenty weeks of 1930, as against a rate of 15.2 for the corresponding weeks of 1929. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large negro population may tend to increase the death rate.

## TEXAS

**Society News.**—Physicians of Livingston gave a chicken barbecue, April 18, for the physicians of adjoining counties and about twenty invited guests.——Dr. William C. Farmer, San Antonio, was elected president of the Texas Public Health Association, April 30, at Houston.

## VIRGINIA

**Personal.**—Dr. Francis Randolph Crawford, formerly of Farmville, has accepted an offer to become director of the Presbyterian Hospital at Kashing, China, it is reported; Dr. Crawford, who was to sail from Seattle, May 31, already has served fourteen years in China as a medical missionary.

## GENERAL

**Renewal of Registration Under Harrison Narcotic Act.**—Physicians who desire to continue to administer, dispense and prescribe narcotics must renew their registration under the Harrison Narcotic Act on or before June 30, paying the annual tax of $1. Failure to do so carries with it liability to criminal prosecution and subjects the tardy registrant to a 25 per cent increase in the tax. Registration in class IV carries with it the right to administer, dispense and prescribe narcotics generally, except the right to dispense so-called exempt narcotic preparations. If a physician does not desire to dispense such preparations, registration in class IV is sufficient. If he desires to dispense them, as well as to administer, dispense and prescribe narcotics generally, he must register in both class IV and class V, but no extra tax is collectable for the dual registration.

**Society News.**—At the annual meeting of the Association of American Physicians, May 7, Dr. Rufus I. Cole, New York, was installed as president; Dr. Thomas B. Futcher, Baltimore, as president elect, and Dr. James H. Means, Boston, secretary, reelected. The next annual session will be held at Atlantic City, N. J., May 5-6.——Dr. Francis G. Blake, New Haven, was installed as president of the American Society for Clinical Investigation, May 5, and Dr. Cyrus C. Sturgis, Ann Arbor, secretary, reelected. The next annual session will be held in Atlantic City, May 4.——The annual meeting of the American Pharmaceutical Manufacturers' Association will be held at the Homestead, Hot Springs, Va., beginning June 9.——Dr. Ludwig W. Kast, New York, was elected president of the American Gastro-Enterological Association at its recent annual meeting, and Dr. Charles G. Lucas, Louisville, Ky., secretary.

**Annual Meeting of Health Officers.**—The twenty-eighth annual conference of state and territorial health officers with the U. S. Public Health Service will be held in joint session with the forty-fifth annual conference of State and Provincial Health Authorities of North America, June 18-20, at the New National Museum, Washington, D. C. Among others on the program are Drs. Charles Armstrong, U. S. Public Health Service, who will speak on "Psittacosis"; R. C. Williams, "Morbidity Registration Area"; Milton V. Veldee, Washington, D. C., "Latest Information Regarding Value of Scarlet Fever Immunization"; Wade H. Frost, Baltimore, "Epidemiologic Problems in State Health Work"; Felix J. Underwood, Jackson, Miss., "County Health Work Appraisal on Basis of Morbidity and Mortality"; William DeKleine, Washington, D. C., "Health Education"; Andy Hall, Mount Vernon, Ill., "Relation Between the Practicing Physician and Departments of Health"; George W. McCoy, "Antirabic Paralysis: Consideration of Various Vaccines"; Louis L. Williams, Jr., "Observations in India"; Walter T. Harrison, Washington, D. C., "Toxoid versus Toxin-Antitoxin"; Clarence C. Little, LL.D., "Cancer," and Dr. Charles W. Stiles, "Prevention of Hookworm Disease and Approved Methods of Control."

**Watch for Child with Umbilical Hernia.**—Mary Agnes Maroney, 2 years of age, was kidnaped from her home in Chicago, May 15, by a young woman who gave the name of Julia Otis. The child had an umbilical hernia which protruded about 1 inch and was quite blue. It probably will be necessary for her abductor to take the child to a physician before long to have the rupture repaired. In the hope that the child may be returned to its parents, all physicians are requested to be on the look out for this patient in their offices. The child has blond curly hair and blue eyes, the left pupil having a brown V in the upper left segment. One front tooth is discolored. She has a red mark on her right cheek, a broad smile, a small nose, and talks only a little. Julia Otis, who abducted Mary Agnes Maroney from her home at 5200 Wentworth Avenue, Chicago, is about 23 years old, 62 inches tall, has brown hair, high cheek bones, a long full face, protruding upper teeth and weighs about 125 pounds. She has means and refinement, a great affection

for children and dresses well. She has been seen wearing a brown ensemble and a gray, with a string of heart shaped pearls. Any one, especially physicians in Chicago and the state of California, who recognizes Mary is requested to wire at once to the City Desk, Chicago *Daily News*, 400 West Madison Street, Chicago, or to telephone Dearborn 1111.

**American Academy of Ophthalmology and Otolaryngology.**—The thirty-fifth annual meeting of this association will be held at Chicago, October 27-31, with headquarters in the Hotel Sherman. The guest of honor will be Dr. Emile de Grosz, Budapest, Hungary. The scientific program will open with a symposium on diseases of the paranasal sinuses and their relation to disorders of the eye, participated in by Drs. de Grosz, Sanford R. Gifford, Chicago, and James A. Babbitt, Philadelphia. Two lectures will be given on progress in ophthalmology by Drs. John N. Evans, Brooklyn, and Cyrus W. Rutherford, Iowa City, on "Diagnosis and Pathology" and "Medical and Surgical Treatment," respectively. Two lectures on progress in otolaryngology will be given by Drs. Arthur W. Proetz, St. Louis, and Samuel J. Kopetzky, New York. Other speakers will be Drs. Mark J. Gottlieb, New York; Robert F. Ridpath, Philadelphia; Otto J. Dixon, Kansas City, Mo.; Ralph Almour, New York; French K. Hansel, St. Louis; Joseph C. Beck, Chicago; Albert E. Bulson, Jr., Fort Wayne, Ind.; Frank J. Novak, Chicago; Robert E. Windham, San Angelo, Texas, and W. Likely Simpson, Memphis, and Richard E. Scammon, Ph.D., Minneapolis.

**Meeting of American Federation of Organizations for the Hard of Hearing.**—The eleventh annual meeting of this association will be held, June 16-19, in New York, with headquarters at the Hotel Roosevelt. Among others, addresses of welcome will be given by Mayor James J. Walker and Dr. Wendell C. Phillips, New York. The tentative program includes, among others, addresses by Drs. Austin A. Hayden, Chicago, "Can We End Deafness?" Arthur J. Cramp, Chicago, "Fighting Deafness Quackery"; John A. Glassburg, New York, "The Ear, an Organ of Speech"; Frank G. Pedley, Montreal, Canada; "Incidence of Occupational Deafness and Methods for Its Prevention"; Emil Amberg, Detroit, "Marriage and Deafness," and Harvey Fletcher, Ph.D., Flushing, N. Y., "Acoustics or Hearing."

**Medical Bills in Congress.**—S. 255, the maternity and infancy bill, was reached on the Senate calendar, May 22 and 23, but Senator Tydings, Maryland, prevented action on the bill by objecting to it. This bill has been listed by the Senate steering committee for consideration at this session of Congress. S. 1171, establishing a National Institute of Health, has passed the House, with amendments, and the Senate has accepted those amendments. S. 3581, authorizing the Secretary of the Interior to arrange with the states for the education, medical attention and the relief of distress of Indians, has passed the Senate, with amendment. S. 4531, introduced by Senator Harris, Georgia, proposes to authorize the United States Public Health Service to make a general survey in connection with the control of cancer and to submit a report thereon to Congress as soon as practicable, together with recommendations for necessary federal legislation. The bill has passed the Senate. H. J. Res. 253, authorizing an appropriation to enable the United States to participate in the Sixth International Congress of Military Medicine and Pharmacy, to be held at Budapest in 1931, has passed the House. H. R. 6124, providing for the reconstruction of the Army and Navy Hospital at Hot Springs, Arkansas, has passed the House, with amendment. H. R. 6340, authorizing an appropriation for additions to the hospital at the Mountain Branch of the National Home for Disabled Volunteer Soldiers, Johnson City, Tennessee, has been reported, with amendment (Report 1566). H. R. 10175, providing for the vocational rehabilitation of persons disabled in industry or otherwise, has passed the Senate, with amendment. H. R. 10375, authorizing the retirement of disabled nurses in the navy, has passed the House, with amendments. H. R. 10662, providing for the hospitalization and medical treatment of transferred members of the Fleet Naval Reserve and Fleet Marine Corps Reserve in government hospitals, without cost to the reservist, has passed the House, with amendments. H. R. 12447, providing hospital and outpatient treatment for retired light keepers, assistant light keepers, and officers and crews of vessels of the Lighthouse Service, has passed the House, with amendment. H. R. 12485, introduced by Representative O'Connor, Oklahoma, proposes to authorize an appropriation of $2,000,000 to construct a veterans' hospital in the first congressional district of Oklahoma.

**Report on Research in Syphilis.**—At the recent annual meeting of the Committee on Research in Syphilis, the Scientific Committee reported that grants totaling $91,515 had been made to twenty investigators who are working in leading universities and scientific institutions in this and other countries. A gift of $25,000 was made early in the year through the efforts of Dr. Paul A. O'Leary, Rochester, Minn., for clinical studies. This made possible the organization of five syphilis clinics, where attempts are being made to establish criteria of cure and to determine the significant factors as regards reinfection, relapse and the development of complications. The problem now being studied is that of the results of treatment in early and latent syphilis. The first results of this cooperative effort will be a publication on infectious relapse, to be presented at the International Congress in Copenhagen in August. The U. S. Public Health Service is supplying the central statistical facilities for analyzing and tabulating the case histories which, at the time of the report, numbered nearly 3,000. Participating in this phase of the work are Drs. John H. Stokes of the University of Pennsylvania School of Medicine, Philadelphia; Joseph E. Moore, Johns Hopkins University School of Medicine, Baltimore; Harold N. Cole, Western Reserve University School of Medicine, Cleveland; Paul A. O'Leary, Mayo Clinic, and Udo J. Wile, University of Michigan. Other studies under way include an investigation of the suggested relationship of yaws with syphilis which has been carried on by medical officers of the United States Navy in Haiti in collaboration with the physicians and public health officials of that country. Dr. Torald Sollmann of Western Reserve University School of Medicine, Cleveland, is investigating for the committee the method and rate of absorption and action of various compounds of mercury and bismuth. Dr. Aldred S. Warthin of the University of Michigan Medical School, Ann Arbor, under a grant, has succeeded in improving the method of recognizing *Spirochaeta pallida* in tissues. Among others to whom grants have been made are Dr. John A. Kolmer, Philadelphia, E. E. Ecker, Ph.D., Western Reserve University, Cleveland, Professor Levaditi of the Pasteur Institute in Paris, and Dr. Hans Zinsser of Harvard, for studies in the biology of *Spirochaeta pallida*. The Scientific Committee met five times during the year, and there was a conference of clinical directors. The Committee on Research in Syphilis was organized in March, 1928, as a point of contact between scientists interested in syphilis and a group of philanthropists who were willing to furnish funds for an organization for the promotion of research.

## CANADA

**Tenth Annual Summer School.**—The Vancouver Medical Association will hold its tenth annual summer school, June 24-27, in the ballroom of the Hotel Georgia. The speakers will be Drs. William F. Cheney, professor of clinical medicine, Stanford University School of Medicine, San Francisco; John G. Fitzgerald, professor of hygiene and preventive medicine, University of Toronto Faculty of Medicine; Oskar Klotz, professor of pathology and bacteriology, University of Toronto Faculty of Medicine; Douglas B. Leitch, department of pediatrics, University of Alberta, Edmonton; Kenneth G. McKenzie, department of surgery, University of Toronto; Henry R. Viets, Harvard University Medical School, Boston; George E. Wilson, department of clinical surgery, University of Toronto. The subjects will include: "Gastric and Duodenal Ulcer, Diagnosis and Treatment"; "Signs and Symptoms of Structural Disease of the Nervous System"; "Infections of the Hand"; "Significance of Ascites and Its Treatment"; "Diagnosis and Treatment of Intracranial Hemorrhage"; "Tumors of Bone"; "Problems Associated with the Nursing Infant" and "Carcinoma of the Large Bowel."

## HAWAII

**Territorial Medical Election.**—At the annual meeting of the Hawaii Territorial Medical Association, April 26-28, Dr. Frederick Irwin, Olaa, was installed as president, Dr. Robert B. Faus, Honolulu, and presidents of other county societies, as vice presidents, and Dr. Archibald N. Sinclair, Box 3373, Honolulu, secretary-treasurer.

## LATIN AMERICA

**Society News.**—The International Congress of Biology will be held at Montevideo, Uruguay, October 8-12. Original papers should not exceed ten pages and should be sent to Casilla del Correo 467, Montevideo, Uruguay, before September 20. The general secretary is Dr. Benigna Varela Fuentes.

**Research at School of Tropical Medicine.**—The director of the School of Tropical Medicine of the University of Porto Rico, Dr. Earl B. McKinley, recently published a report of the work done during the third year of the school. An event of the past year was the beginning of the *Journal of Public Health and Tropical Medicine*, published quarterly by the

Department of Health of Porto Rico and the school of tropical medicine. Research was carried on in filariasis, sprue, leprosy, nutrition, malaria, immunology of parasites, tuberculosis and respiratory infections, experimental encephalitis and undulant fever.

## FOREIGN

**Hospital News.**—The New Medical Clinic of Genoa, Italy, was opened, April 16; it is located on the Hill of S. Martino d'Albaro and represents a triple alliance: the clinic of internal diseases, the clinic of diseases of development (Istituto Biogipologico-Ortogenetico), and the clinic of occupational diseases. Prof. Nicola Pende is general director.

**New Medical Journal.**—The first issue of *Revista Española de Tuberculosis* appeared last April; it is published in Madrid, Spain. The editorial staff comprises Drs. J. Valdes Lambea, editor, J. Alvarez Sierra, assistant director, and J. Ruiz de Guradia, secretary of redaction. *Revista Española de Tuberculosis* will deal with problems related to disease of the respiratory tract.

**Graduate Course in Cancer.**—The faculty of medicine of the University of Strasbourg announces that the third graduate course on cancer will be held at the university and the Anti-Cancer Center in Strasbourg, July 16-26. Theoretical and practical courses are offered and will include methods of treatment by physical agents; living cases will also be demonstrated. The number of graduate students will be limited; the fee is 500 francs. Further information may be had from Dr. Gunsett, director, Anti-Cancer Center, Civil Hospital, Strasbourg, France.

**Royal Institute of Public Health.**—The next congress of this institute will be held at Portsmouth, June 4-9, under the presidency of J. E. B. Seely, lord lieutenant of Hampshire. Dr. Harry R. Kenwood will speak on "State Medicine and Municipal Hygiene"; Surg. Rear-Admiral Henry C. Whiteside, "Naval, Military and Air (Including Tropical) Diseases"; Prof. Sir Thomas Oliver, "Industrial Hygiene"; Lady Keyes, "Women and Children and the Public Health," and Sir Henry Gauvain, "Tuberculosis." Further information may be had on application to the secretaries, 37, Russell Square, London, W.C.1.

**Women Physicians and Appointments to Government Positions.**—The Central Public Health Committee of the London County Council, which controls a large number of hospitals and district medical services, has decided that appointments to positions in those services in all grades shall be open equally to women and men physicians. A decision in this matter was made necessary by the local government act of 1929. This is not the first branch of the public services that has been thrown open equally to physicians of the two sexes. The London County Council is the governing body of the city of London.

**Graduate Courses in Budapest.**—Theoretical and practical courses of six weeks' duration will be held, beginning October 15, under the auspices of the Hungarian Medical Postgraduate Committee. The courses will be given to groups not exceeding ten members and will be in ophthalmology, urologic surgery, gynecology and obstetrics, otorhinolaryngology and surgery. The fee will be $5 an hour, to be divided among the participants. If sufficient participants present themselves, courses will be held also in other branches of medicine. Inquiries should be addressed to Dr. Edmund Zalka, Budapest, Hungary, IX. Gyali ut 1. Szent István kórház.

**Society News.**—The Oliver-Sharpey lectures were delivered by Dr. John J. R. Macleod before the Royal College of Physicians, April 29 and May 1, on diabetes as a physiologic problem.——"Radium in Cancer" was the subject of the graduate lecture of Dr. J. Murdoch, Brussels, at the University of Sheffield, Sheffield, May 6.——The section of medicine of the Royal Society of Medicine was addressed, April 25, by Dr. Leonard G. Rowntree, Rochester, Minn., on "Chronic Arthritis Treated by Ganglionectomy," and Prof. Walter E. Dixon, Cambridge, and George N. Myers, Durham, on "Curative Action of Digitalis on Toxemia."——The twelfth Carlsbad international medical postgraduate course with special reference to balneology and balneotherapy will be held September 14-20. Dr. Max Einhorn, New York, will represent the United States; all physicians who attend will receive a passport visé free of charge and 33 per cent reduction on all state railways in Czechoslovakia. Dr. Edgar Ganz is secretary of the medical postgraduate course in Carlsbad, Czechoslovakia.

### Deaths in Other Countries

**Hubert J. B. Fry,** England, blood poisoning from a scratch during a postmortem examination. Dr. Fry was known for his work on cancer.——**Robert Bridges,** poet laureate, at Oxford, England, April 21, aged 85.

# *Foreign Letters*

## LONDON

*(From Our Regular Correspondent)*

May 10, 1930.

### The Evils of Medical Socialism

The excessive claims for sickness benefit under the national health insurance act and their alarming increase have been described in previous letters. Sickness benefit claims of married women have risen between 1921 and 1927 by 106 per cent and disablement benefit by 159 per cent. Fourteen men in every thousand claimed sickness benefit in 1921; twenty-three in 1927. In a press interview a government official has in the *Daily Chronicle* thrown some light on the subject. "Physicians are afraid to lose patients," he said. "If they are strict in dealing with doubtful claimants, they know that these will move off to a physician with a reputation for greater leniency. In times of industrial depression a workman on short time often finds it more advantageous to take a rest under physician's orders and receive the society's benefit. Behind the present position of ever-growing sickness claims there is the disquieting threat of retaliation by the approved societies. If the claims continue they will seek to make good their position by reducing the additional benefits. Workers "go sick" to secure the certainty of benefit in preference to the prospect of short time. Also they prolong payment for some slight ailment far longer than they ought. In the war, when work was plentiful and payment high, there was far less sickness. One check is to bring cases of excessively long sickness claims before the medical officer of the district (who acts as a referee). When so challenged, a large proportion of the claimants do not appear but go back to work straightway. A further proportion are found to be fit.

In the house of commons the minister of health said that the increase of sickness claims was a serious problem, which would be investigated. He was convinced that there was no simple explanation of the increase. The same problem had arisen in other countries which had schemes of sickness insurance. In Germany the increase in 1929 was 70 per cent over 1924. He believed that the prolonged trade depression is an important factor. Another was that people were seeking advice earlier than they used to do. The public had been repeatedly urged to obtain treatment at the earliest possible moment; an increase due to this cause was to be welcomed, for it meant ultimate economy in the funds. There were cases in which, owing to laxity of certification or administration, persons were in receipt of benefit to which they were not entitled. A new regulation would be issued which would enable effective disciplinary action to be taken where is was proved that a physician had failed to exercise reasonable care in the issue of certificates.

This statement, by a labor minister, is an attempt, among others made by labor representatives and others, to argue that there is no extensive abuse of the insurance system; but this is not so. The government actuary found "that of all claimants who passed from sickness benefit to disablement benefit in 1927 and ceased to draw benefit before the end of the year, more than one in six went off the funds almost immediately the benefit was reduced to the disablement rate. Within a month of the reduction 50 per cent had been certified as capable of work and within eight weeks 70 per cent had found their working capacity restored." The annual report of the ministry of health confirms the impression that the increase in claims is not due to any deterioration in the health of the nation. The infant mortality in 1928 was the lowest ever recorded. The number of cases of tuberculosis was practically stationary.

### The National Medical Service Scheme

Commenting on the national service scheme, brought forward by the British Medical Association to make available for the

individual patient, through the agency of the family physician, a consultant service and all necessary specialist and auxiliary treatment, the *Daily Telegraph* says that the citizen who is guaranteed all these boons for himself and his dependents in return for his weekly contribution will be a lucky person. But this condition applies only to manual workers and to other persons whose incomes do not exceed $1,250 per annum. All others, comprising the middle and professional classes and the rich, whether "idle" or "industrious," are to go on as before, paying for their medical needs and also paying their share of the vast additional sums which will be required to finance this scheme. This is described as a serious blot. However, it will be only one more step in our recent socialistic legislation, which consists in taxing ability, thrift and industry for the benefit of those lacking in some or all of these qualities.

### Carotin and Vitamin A

In the latest issue of the *British Journal of Experimental Pathology*, Prof. Edward Mellanby and Mr. H. N. Green described experiments which show that carotin has a similar action to vitamin A, though whether it is the same substance or contains one that is the same remains unknown. Carotin was found to confer complete immunity on growing rats against the development of the infections that follow when vitamin A is absent from the diet. The authors think that the evidence is in favor of the view that the efficacy of carrots, green vegetables and even butter and egg yolk depends on the presence of carotin in these substances and they suggest that the liver stores vitamin A "as a highly leuko form of carotinoid which may be reconverted to carotin and liberated into the circulation as required." They add that if carotin has a similar function in man to that exerted in the rat, as seems probable, it should prove valuable as a prophylactic and therapeutic agent. It is much easier to administer than liver fat and may be expected to act more quickly. Incidentally, the popular belief in the value of carrots and green vegetables finds justification. The authors have made one observation of great practical importance. They find that while 0.005 mg. of carotin will promote growth resumption in the rat, a much larger dose, 0.02 mg., is necessary for complete protection against infections of the mucous membrane. It follows that the outward signs of vitamin A deficiency may be suppressed at a certain dosage, while deficiency may remain in the form of liability to infections of the mucous membranes. Thus, when such infections occur in man, obvious evidence of their cause may be wanting.

### The Deadly London Streets

The official figures show that during the first three months of this year there was a 25 per cent increase in the number of persons killed by the traffic in London over those for the same period of last year. The total is about 320, which means that every day at least three people are killed. How to make the streets safe is a problem which the authorities acknowledge to be one of the most difficult presented to them. Every possible form of traffic regulation, including police regulators at all important crossings, marking the streets, roundabouts and one-way traffic in certain streets, is in use. A traffic official has stated that he is not inclined to lay the blame altogether on the carelessness of the victims. People are now more careful than ever, but the danger is becoming more acute. More cars than ever are coming on the roads and the traffic streams in the streets are getting thicker and thicker. At the same time carelessness in crossing the street is the cause of more deaths than anything else. Roundabout schemes have meant fewer deaths at danger spots, and the authorities are trying to extend the scheme to the suburbs.

### Robert Bridges: Physician and Poet

Robert Seymour Bridges, O.M., M.B., F.R.C.P., Poet Laureate, has died at the age of 85 years. Educated at Eton and Oxford, he entered St. Bartholomew's Hospital and on graduation served as house physician and later as casualty physician. Afterward he was assistant physician to the Great Northern Hospital and the Hospital for Sick Children, Great Ormond Street. Thus, unlike his great predecessor Keats, he did not abandon his profession on qualification but practiced it. The call of literature became so strong that he abandoned medicine at the age of 37. He made his reputation first by "Shorter Poems," published from 1873 to 1880. He won the praises of the cultured but for popularity he was a little too subtle. His last and perhaps greatest work, "The Testament of Beauty," appeared on his eighty-fifth birthday. In it religious feeling and deep insight into humanity, derived partly from his experience as a physician, are blended. Through a personal synthesis the whole spirit of the age receives in it masterly expression. In 1924 he visited the United States and stayed at Ann Arbor for three months as the guest of the University of Michigan.

## PARIS

*(From Our Regular Correspondent)*

April 23, 1930.

### Measuring the Speed of Circulation

Dr. Lian and Madame E. Barras applied to the study of the measurement of the speed of circulation in man the use of a 5 per cent solution of fluorescein in physiologic solution of sodium chloride. They inject 2 cc. of this solution in a vein of the elbow and then puncture the vein at the same place in both arms. The blood is collected in twelve small glass tubes containing 95 per cent alcohol at 10, 20, 30, 35, 40, 50, 60, 75, 90, 120, 150 and 180 seconds after the injection. Then the tubes are shaken and placed in a rack for a few minutes. If the tubes are inspected on a dark background, in a room to which no sunlight is admitted, the fluorescence will be readily observed. The speed of circulation in a normal person is thirty seconds between the two upper limbs. This figure was obtained in a healthy subject and in seven patients without heart disease. They applied the test also in twenty-five heart patients. Cardiac insufficiency is associated habitually with a notable retardation in the appearance of the fluorescein; in place of thirty seconds, the normal figure, the authors observed as high as 150 seconds. Marked left ventricular insufficiency without edema is susceptible, to a greater extent than asystolia with generalized edemas, of producing considerable diminution in the speed of circulation. Occasionally, the test will reveal a cardiac insufficiency that is still latent. Digitalin and ouabain are capable of diminishing and even of suppressing the retardation in the appearance of the fluorescein. The test may be used to determine the significance of cardiac insufficiency, to determine the action of cardiodynamic remedies, to measure the degree of improvement, for making an early diagnosis of cardiac insufficiency, and for making a prognosis.

### Electrocoagulation in the Treatment of Rhinophyma

P. Bordier, of the Faculté de médecine de Lyon, has recently applied diathermy and electrocoagulation to the treatment of rhinophyma, the nasal tumor that is not amenable ordinarily to other than surgical treatment. Formerly, Professor Bordier used electrolysis, a slow method, which gave mediocre results. He now prefers electrocoagulation, using a bipolar apparatus that supplies a more intense current than ordinary to the tissues traversed by the high frequency current; that is to say, to the region of the two electrodes between which are interposed the tissues to be destroyed. The action of the current is limited to the line that unites the two poles instead of being dispersed partially in the adjacent area, as occurs with the monopolar method—with an indifferent electrode and an active electrode. One employs a bipolar diathermic clamp in which the bipolar fork is widely variable. The first is indicated particularly for pedicled tumors. The current employed is about 200 milliamperes. The applicator is so constructed as to allow a range

from 2 mm. to 2 cm., according to the volume of the tumor to be treated. Local anesthesia with procaine hydrochloride or a similar product is employed; but it is not absolutely necessary, for the current has a limited range and there is no chance of its reaching the nerve fibers. Bordier presented photographs of a patient affected with a nasal tumor, who was cured in two sittings, six months apart, at the first sitting two large masses having been destroyed, while the second sitting eliminated the central less isolated mass. The coagulated masses form an eschar and drop off spontaneously after a few days of application of wet dressings. The cosmetic result is excellent.

### Vaccination of Dogs Against Rabies

Dr. Remlinger, director of the Pasteur Institute of Tangiers, is continuing his vaccination work with dogs, inoculating them against rabies, in the French protectorate of Morocco. In a communication addressed to the Academy of Medicine, he has furnished information on 635 animals vaccinated either preventively or after being bitten by a rabid animal. Not one of the animals vaccinated has contracted rabies.

### American Foundations in Paris

The Maison des étudiants américains, in the Cité universitaire de Paris, has been completed and the flag of the United States already floats over it. The inauguration of the dormitory is set for April 28. The ceremonies will be participated in by the president of the republic, the ambassador of the United States, the diplomatic corps, the university authorities, and Mr. and Mrs. Homer Gage, president of the Comité de la fondation, whose generosity was chiefly instrumental in bringing about a realization of the undertaking.

The Hôpital américain de Paris, located at Neuilly, in the suburbs of Paris, has become the definitive beneficiary of the estate of Mr. John Warden, valued at $4,000,000. Mrs. Irene Warden, widow of the generous donor, will receive the income of the estate until her death.

### Determining Students' Aptitude for Sports

The purpose of the creation of an institute of physical education at the University of Paris is to establish a center of instruction and study, with a view to introducing scientific methods in a field heretofore left to the teachers of gymnastics, of many different types. The director of the new institute will be Dr. Chailley-Bert (grandson of the physiologist Paul Bert), who has specialized many years in physical education. Research in this domain has heretofore been carried on in Paris only at the Conservatoire des arts et métiers, such researches being confined to the physical labor of the workman with relation to hygiene and the industrial or economic output, and for gymnastics at the Ecole militaire de Joinville pour la gymnastique, of which Dr. Boigey has been the director. Chailley-Bert desired to see incorporated in this instruction the physical education of children and adolescents and the preparation for participation in sports such as are followed today in the schools and colleges, which explains why the new institute is associated with the University of Paris. Chailley-Bert is the author of a booklet on physical education, which is given to every pupil of the lycées affiliated with the University of Paris. The booklet describes the preconditions to be met by each class of pupils, according to their age, before being authorized to participate in a sport or in the exercises of physical education. A physical examination is made of every applicant. The examinee is required to flex the body ten times at the knees, at the rate of one flexion every two seconds, the pulse rate having been first recorded and the arterial pressure measured. These determinations are made again at the end of the exercises and also at the end of each minute. A return to the first figures in two minutes must be effected for a subject to be declared normal. If he does not meet this condition, he will be forbidden to participate in sports and is permitted to take only moderate physical training. If the pulse has increased, for instance, forty beats a minutes and if the return to normal requires three, four or five minutes, even the physical exercises will be forbidden until the condition of the subject shall have improved through treatment. The same advice, according to Chailley-Bert, should be given to adults who, after reaching age 40, decide, in order to reduce their waist measurement, to devote themselves to various sports. Many of these are not fit for participation in sports without previous adaptation, and if they were to indulge in them without preparation they would run the risk of fatiguing themselves to such an extent as to be dangerous, for there are, among their number, many persons with arteriosclerosis, high blood pressure and even cardiac lesions.

## AUSTRALIA

*(From Our Regular Correspondent)*

April 16, 1930.

### Report on Maternal and Child Welfare

At the invitation of the government of the commonwealth of Australia, Dame Janet M. Campbell, senior medical officer of the ministry of health of England, visited Australia last year and investigated the conditions of maternal and infant welfare. Her report has now been issued and it embodies recommendations that will doubtless form the basis of an Australian maternal and infant welfare program in the future.

#### MATERNAL MORTALITY

The report first considers the maternal mortality rate in Australia (deaths per thousand live births). The disquieting fact is brought to light that the rate for 1928 was 5.98: a rate, the report states, that is not only excessive in itself but is the highest rate on record for Australia during the period under review (1911-1928). This rate is higher than that for England and Wales, and is more than double the rate for Holland and Scandinavia. In Australia, nearly a third of the deaths are from puerperal sepsis, followed by the toxemia group, the hemorrhages, and the accidents of childbirth.

#### INFANT MORTALITY

The infant mortality rate is more satisfactory. The steady reduction of the infant death rate from 96.91 per thousand in the beginning of the century to 52.96 in 1928 is an achievement. The neonatal death rate, however, has improved but slightly. The principal causes of death, which account for 70 or 80 per cent of the total, are: (1) developmental conditions, including prematurity, injury during birth, debility, congenital malformations and convulsions, 49.19 per cent; (2) respiratory diseases, 10.72 per cent; (3) gastro-enteritis, 19.59 per cent. The low proportion of deaths from respiratory diseases is to be expected in view of the sunny conditions in Australia.

There is no registration of stillbirths in Australia, and only Western Australia requires notification. Indirect information obtained as a result of claims made for the maternity allowance of £5 indicates that the stillbirth rate averages about 30 per thousand live births and remains fairly constant. This figure approximately corresponds with the English returns.

Dame Janet Campbell was favorably impressed with the domestic and social circumstances of the people from the point of view of health and hygiene. There is abundance of sunlight and opportunities for open-air exercise; the housing is good and there are no tenements or slums such as are known in England. The average standard of living is high, and there are few congested areas of population. Australia's main problem is the provision of medical and nursing care for those living in the sparsely inhabited districts.

#### FACILITIES FOR INFANT WELFARE

Infant welfare organizations in all states of Australia employ two methods of instruction in mothercraft. The first is by visits from an infant nursing specialist, and the second is by providing

welfare centers to which the baby can be brought for supervision and advice, and where collective and individual teaching can be imparted. In New South Wales there are eighty centers, all under the control of the director of maternal and baby welfare, who is an officer of the health department. There are 210 nurses, appointed by and responsible to the health department, who undertake home visiting and attend the centers. In Victoria, two voluntary associations working on similar lines have been responsible for organizing a number of centers, while other centers have been established independently; support is given by the municipalities in which the centers are situated and excellent premises have usually been provided, while the government makes substantial contributions toward maintenance. In Queensland there is a part-time director of infant welfare and there are fifteen centers, all well housed in buildings erected by the government; the nurses are appointed by the state department. In South Australia the centers are under the control of a voluntary body, the Mothers' and Babies' Health Association, which has forty-five centers, mainly in Adelaide and its suburbs; the work, which is steadily expanding, is subsidized by the state and municipalities. In Western Australia fourteen centers have been established by voluntary associations which are recognized and subsidized by the state. In Tasmania there are voluntary associations in the north and in the south which are responsible for the centers and for home visiting. The centers are subsidized by the government and the municipalities. The nurses are appointed and paid by the government.

Infant welfare centers are similar all over Australia; the accommodation is good, and in some of the specially constructed buildings the equipment is almost luxurious. The nurses in charge are fully trained. No medical treatment is given, and cases of illness or marked malnutrition are referred to the family physician or to a hospital. A feature of the attendance at the clinics in Australia is that it covers all social classes. Limousines and utility vans are alike to be seen waiting without. There is a marked absence of medical control of the clinics, partly on account of the desire to emphasize the fact that the clinics have primarily an educative function, and partly on account of the difficulty of obtaining the services of medical practitioners who are specially trained in infant welfare and who are not in private practice in the neighborhood.

### FACILITIES FOR MATERNAL WELFARE

Practically all maternity hospitals in large centers have antenatal clinics attached, but difficulties in securing attendance arise from inertia on the part of the women and also because many of the patients live far away. Throughout Australia, buildings are being extended to provide more maternity beds, and in many country districts new maternity wards or departments have been added to the general hospitals. Small bush nursing hospitals are being provided in districts too sparsely populated to support larger institutions. Private maternity hospitals of all grades of efficiency exist in most towns.

The maternal death rate for unmarried mothers is higher than among married women, and the death rate among illegitimate infants is approximately twice as high as among legitimately born children. Provision is made by voluntary bodies for the care of unmarried girls during and after pregnancy.

For the after-care of maternity patients in general, success has been attained by providing facilities for rest, good food and nursing attention at an after-care home established three years ago by the district nursing association in Melbourne. This home caters to those mothers who are confined in their own houses and who require extra care and rest, and also to those who, on account of pressure of bed accommodation in maternity hospitals, are obliged to leave on the tenth day of the puerperium. Bush nursing associations exist in all states except South Australia. The primary object is to establish nurses in isolated country districts where medical aid is absent or difficult to secure rapidly, the nurse being prepared to undertake maternity work and to nurse patients at home. Bush nurses are fully trained and possess a midwifery certificate, in addition to which they are now encouraged to obtain a certificate in mothercraft. The nurse is usually chosen and appointed by the central association, which assists in providing housing and equipment; but the local community is expected to be responsible for maintenance. The bush nurse has a hard life; she may find it difficult to secure comfortable accommodation unless a cottage is provided for her; she has to work long hours in all sorts of weather; she often has to overcome certain prejudices in the minds of people who fail to realize that a fully trained nurse cannot properly be asked to undertake domestic work in addition to nursing duties, and even sometimes to persuade local practitioners that she is an aid and not a menace to medical practice. As a rule, she rapidly gains the confidence of the community and occupies a trusted and respected position.

Midwifery may be undertaken in normal cases in the mother's home, the nurse being resident for a short time if necessary. Bush nurses are encouraged to exercise prenatal supervision of their patients and, if any abnormal condition is suspected, the mother is assisted to go to the nearest maternity institution. In some places provision is made in connection with the nurse's cottage for the admission of one or two maternity cases. In Victoria, small bush-nursing hospitals are now being erected in relatively populous districts, but in such instances the nurses are resident and do not undertake domiciliary nursing.

The Australian Inland Mission, under the auspices of the Presbyterian Church, has organized nursing and medical aid in some almost inaccessible districts in the northern parts of Western Australia and in Queensland and has now twelve well equipped stations in the interior. Two nurses are sent together for service in a small hospital in a district which may be 200 miles from the nearest physician. The establishment of a "flying doctor," based from Cloncurry, is a development of the work of the mission.

### SUGGESTIONS FOR IMPROVING MATERNAL WELFARE

The action of the Universities of Sydney and Melbourne in creating professorships in obstetrics indicates the importance attached to the subject and is the first step toward much needed reform in the curriculum. The extension of postgraduate instruction is recommended.

As regards the midwife, the Australian regulations require a training period of six months for the general trained nurse and twelve months for untrained women. All training institutions should be under expert supervision from an official central authority to insure that the accommodation and equipment remain satisfactory and the requirements of the curriculum are fulfilled. Such steps as possible should be taken to secure for the qualified midwife a high professional status and adequate remuneration. There should be more uniformity in the collection and recording of maternal welfare statistics. An important distinction that should be made is between deaths from septicemia after parturition and those following abortion. Owing to the difficulties attendant on the notification of puerperal sepsis, it is suggested that "puerperal pyrexia," defined according to the British Medical Association standard, be notified.

Dame Janet Campbell is inclined to the view that, for practical obstetric practice, the best compromise is for the physician to accept full medical responsibility for the pregnancy, confinement and puerperium, but that the actual conduct of the normal labor should be left to the midwife.

### SUGGESTIONS FOR IMPROVING CHILD WELFARE

In each state there should be established a division of maternal, infant and child welfare in charge of a whole-time medical director who should be prepared to cooperate fully with the medical profession and be assisted by an advisory council com-

posed of the various medical, nursing, social and lay interests. The division of maternal and child welfare would take an active part in the education of individuals and the informing of public opinion by means of propaganda and publicity methods. A commonwealth center of control for maternity and child welfare is essential for the collection of information and for the examination of problems on a national scale. The director, in Dame Janet Campbell's opinion, should be a medical woman of the necessary personality and qualifications. The center would standardize the qualifications of nurses and other officers, giving official recognition to those training institutions which comply with the basic requirements and would encourage and subsidize research activities into maternal and child welfare problems. One of the first necessities is an investigation into every maternal death. By this means, information would be supplied from which precise and accurate conclusions could be drawn and on which a structure of preventive obstetrics could be built.

### Appeal for Chair of Obstetrics at Otago University

Stimulated by the recent establishment of chairs of obstetrics at the universities of Melbourne and Sydney, the New Zealand Obstetrical Society has initiated a public appeal for a sum of £25,000 to provide a yearly salary of £2,000 for a professor of obstetrics at the medical school of the University of Otago. The time is considered to be opportune in view of the decision of the New Zealand government to build at the Dunedin Hospital a modern obstetric hospital of forty beds at a cost of £50,000. The present part-time lecturer is due to retire in a few months. The maternal mortality rate for New Zealand for 1929 was 47.05 per thousand; the birth rate for 1926 was 21.05 per thousand, and the white population of New Zealand was 1,370,000 in 1927.

### Hospital Commission for Queensland

The government of Queensland has been endeavoring to appoint a royal commission on Queensland public hospitals for the past six months, but some difficulty has been experienced in obtaining a chairman with sufficient ability and experience in hospital organization. This difficulty has now been overcome by the loan from New South Wales of the chairman of the permanent hospital commission of their state, Mr. Love.

One of the main duties of the royal commission, the personnel of which will include two members besides the chairman, will be to consider the financial aspect of administration and to make recommendations for a more economical utilization of resources. The Queensland hospitals derive their funds from various sources, ranging from the Golden Casket at one end of the scale and the hospital tax at the other. A vital question also is that of meeting the ever-growing demands on hospital accommodation in all municipal areas and in many of the country districts as well. Problems of staffing and unified control will also engage the attention of the commission. A scheme of coordination is desirable.

### The Federal Health Council

In the interests of better coordination of Australian health activities, especially in those fields of activity in which both the commonwealth and the state governments have a common interest, the federal health council has been formed and is holding regular meetings. At the last, held at Canberra, the new seat of the commonwealth government, it was decided that the commonwealth should subsidize the states in establishing dispensaries for the treatment of tuberculosis.

Infection by bovine tuberculosis was considered to constitute a question of primary importance to the public health and it was decided that vigorous attempts should be made to reduce it by the control of tuberculous infection among dairy herds through the use of all established methods applied under a system in which sympathetic guidance would be blended with legal control. Pasteurization and the bottling and grading of milk according to the bacteriologic content also were suggested for all urban communities. The food value of milk was to be interfered with as little as possible.

Dealing with the maternal and infant hygiene, it was decided by the council that the principle of correlation by the health department in each state of all activities of this nature was fundamentally sound, and the steps should be taken in that direction by the commonwealth. The council further considered that the commonwealth should take steps to establish a division of the department of health to deal with maternal and child welfare.

Subsidies, with appropriate conditions to encourage the work in connection with maternal and child welfare, and the encouragement of research into various aspects of maternal and child welfare, particularly puerperal infection, also were advocated.

## VIENNA

*(From Our Regular Correspondent)*

April 19, 1930.

### The Dying Out of Intellectual Families

Professor Muckermann of the Kaiser Wilhelms-Institut in Berlin delivered recently an address before the Vienna Scientific Society in which he discussed research on the mode of propagation among various groups of persons. An investigation on the propagation of the most gifted types was carried out on 4,000 families of university professors. It was found that 15 per cent of the families are childless. The average number of children to a family is 2.8; but of these children about one fourth die before they are married. The children of the professors now living are insufficient in number to replace their parents. But more important, the number of children is not sufficient to assure the preservation of the gifted types. For that to be accomplished, all the children now born in the professors' families would have to equal their parents in endowments. But in the families of the most highly endowed the number of children falls below two. Research has been made on the previous generation of the same families and it has been ascertained how many brothers and sisters there were in the families to which the spouses of the professorial marriages belonged. It was found that in a single generation there had been a 43 per cent decrease in the average number of children to a family. The social rise of these families that originally did not belong to the university circles had been bought by a decrease in the number of the offspring. Investigations on families of several hundred pupils in continuation schools (all from workmen's families) revealed that the children with the better grades in school were sprung from families in which the number of children is insufficient to replace the aggregate number of parents. Between skilled and unskilled workmen there is this difference: the families of the skilled are characterized by a reduced fertility, whereas the unskilled workmen have three children, on an average; thus is presented the tragic effect of social progress. It was ascertained further that the children of the unskilled workmen—who were greater in number than those of the skilled workmen—again become unskilled workmen. Similar observations were made in peasant families in the villages. Here there are commonly six or seven children in a family. It was quite surprising that in such families the child mortality was not higher than in families with few children, so that, as a rule, five children survive for the building of the next generation. The conditions were best in those families in which the children were breast-fed.

### Increase in Diphtheria and Scarlet Fever

Since the beginning of the year, there has been a marked increase in scarlet fever and diphtheria. Similar conditions have been reported from almost all the large cities of Europe. The observation has caused anxiety among the population of Vienna,

for, three years ago, when such conditions prevailed, the mortality was high. The health authorities sought, therefore, to calm the public mind by announcing that the present epidemic is characterized by a relatively low mortality. Nevertheless, a large portion of the public schools had to be closed to prevent a further spread of the epidemic. The reports of the public health service show an increase of 50 per cent in the number of cases, as compared with last year. The precautions taken are so strict that every class in school in which two come down with an infectious disease is disbanded temporarily. If several classes have to be disbanded, the whole school is closed. So far, the mortality from scarlet fever has been only 0.8 per cent, while that of diphtheria has been 5 per cent, which, while not high, is higher than the average for the last three years. In order to secure beds for the numerous convalescents after this epidemic, Vienna has made available two large homes for convalescents, in which 350 and 150 children, respectively, can be cared for. It is hoped that the epidemic may soon be checked, so that the fears of the population may be allayed.

### Strict Control of Prescriptions Containing Alkaloids

In order to control the great increase in the consumption of narcotics such as morphine, cocaine, heroin, and also alcohol, the chief *sanitätsrat* has issued instructions to all pharmacists to fill only once a prescription containing one of the drugs mentioned, and to retain the receipt. Once a month, the supplies of the pharmacist will be checked up to see whether or not the quantity of narcotics on hand agrees with the amounts received and the amounts dispensed, as shown by the filed prescriptions. Furthermore, physicians are urged to be conservative in prescribing narcotics. In recent months, several physicians have been summoned to appear in court for having issued prescriptions with unduly large doses of morphine or cocaine. The railway authorities have likewise issued an order that officials and train employees must abstain from alcoholic beverages while on duty. This constitutes partial prohibition, which from the standpoint of the physician is not unwelcome.

### Social Significance of Rickets and Tuberculosis

In a recent number of the *Soziale Arbeit*, Prof. Dr. Hass, the director of the Vienna Orthopedic Clinic, discusses rickets and tuberculosis, which he regards as the results of bad social conditions. The important influence of undernutrition, unhygienic dwellings, overwork and the like on the genesis of these conditions was plainly shown by the war and the postwar periods. From the Vienna Orthopedic Institute, the following statistics were obtained: Up to 1913, the number of cases of rickets was about 25.58 per cent of all the orthopedic cases; from 1914 to 1918 they amounted to 35 per cent and from 1924 to 1928 to only 19 per cent. In tuberculosis of the bones, up to 1913, among all cases, there were 5.9 per cent; in the war years the figure rises to 14 per cent, after which there is a steady decline, until, in the period 1924 to 1928, the low figure of 4 per cent is reached. Tuberculosis of the bones and joints increased, therefore, during the war by 250 per cent, but with the return of better conditions it dropped to about two thirds of the prewar period. Similar conditions are seen in rickets: an important increase during the war period, a distinct decrease in the later years. In addition to the general progress of medicine, an essential factor in the diminution of morbidity figures is the betterment in the knowledge of nutrition (researches on vitamins) and the great increase of air and sun treatment, which has been taken up by large sections of the population. The outlook for the rachitic is not as good as for the tuberculous. The reason is doubtless to be sought in the fact that rickets is a painless, not particularly dangerous disease, which produces merely deformities. The social importance of such cosmetic injuries must not be underestimated. The young person with a hump-back or bow-legs suffers under his deformity often more than one with an internal disease. Psychic depressions or other inferiority symptoms are not infrequent sequels. It is consequently the duty of physicians to institute active treatment of these disorders while there is yet time. The cooperation of the parents and the school physicians is important. The indolence of the parents is often a stumbling block in the crusade for the normal development of children's bodies. Curvature of the spine is often brought to the physician too late, when the time for repair is past. The erection of special institutes for patients with bone diseases is much needed; they could be established in the vicinity of a large city, and associated with a professional orthopedic clinic. A special branch of public welfare should take charge of these deforming diseases, as in the crusade against pulmonary tuberculosis, in order to save for the state valuable man power.

### Treatment of Nephritis in Children

The treatment of pathologic renal conditions in children was recently taken up by Dr. Helmreich at the seminar of the Wiener Medizinisches Doktoren-Kollegium. Two forms of inflammation must be distinguished: nephritis and nephrosis. In nephritis the glomeruli are damaged, so that the metabolic waste of protein is poorly eliminated. In nephrosis it is a question of degeneration of the tubules, so that clinically a considerable diminution of the quantity of urine and a distinct edema are observed, together with large quantities of albumin in the urine. Accordingly, the treatment in nephritis consists of dietetic measures; in nephrosis the treatment is medicinal. The best food for nephritic children during the first five or six days has been found to be sweetened water—about 10 Gm. of sugar per kilogram of body weight in from 0.5 to 0.75 liter of water. Fruit juices and fruit are well borne. Under this treatment, all symptoms (headache, bloody tinge of the urine, high blood pressure) are soon eliminated, so that the second diet, protein-free carbohydrates, can be instituted in a short time. The second diet consists of cookies, crackers and potatoes. A purely milk diet is too rich in protein and cannot be recommended, although it was formerly commonly given. The author does not permit milk until the second or third week, and then in small quantities—from 50 to 100 Gm. a day, the amount being gradually increased. When only a few erythrocytes and casts appear in the urine, a transition may be made to a light mixed diet poor in protein. From four to seven weeks after the onset of the disorder, if the urine is normal, the ordinary diet may be resumed, provided it is still low in protein. The test of renal functioning is carried out thus: the child drinks in the morning, on an empty stomach, 0.75 liter of "tea" and the quantity of urine is measured hourly. In the afternoon, the concentration test is made, which should give for healthy kidneys a specific gravity of at least 1.025.

In nephrosis, on the other hand, the administration of urea —from 50 to 60 Gm. daily—has often proved efficacious. Among other diuretic remedies, merbaphen and mersalyl may be mentioned, with the aid of which often from 2 to 3 liters a day may be removed from the body. In using these medicaments, one must see that the glomeruli are functioning properly. Digitalis in combination with theobromine sodiosalicylate is often more effective than the latter remedy alone.

### Vital Statistics of Jews in Vienna

The Jewish congregation in Vienna, comprising about 200,000 persons, is grouped together in a single corporation, the "Kultusgemeinde," so that statistical data are reliable and easy to obtain. Some time ago, the figures on deaths and births were published: From 1921 to 1928, one observes a constant and steady decline of the birth rate. The respective totals for this eight year period are 3,080, 2,966, 2,721, 2,557, 2,190, 1,752, 1,497 and 1,216. The official figures for 1929 have not yet been published, but the total is said to be below 1,000. The death totals for the same eight year period are, respec-

tively, 2,868, 2,966, 2,659, 2,597, 2,496, 2,621, 2,729 and 2,864. A distinct upward trend in recent years will be observed, so that the Jewish congregation, since there is no influx from without, is threatened with annihilation. Of interest, on the other hand, is the great number of Jews who died above the age of 90. In 1924, no fewer than 188 persons had passed the 90 mark at their death, while 19 (16 of whom were women) were over 100 years old. In 1925, 212 persons passed the 90 mark, while 23 were more than 100 years old at death. In 1926, the number over 90 years of age was 232, with 14 passing the 100 mark. In 1927, the number of persons reaching 90 was 255, 25 of whom were over 100 at death. Since 1927, the figures have run about the same. The number of deaths of children under 1 year of age has been materially reduced, although some of the reduction can be accounted for by the decrease in the number of births; the total number of infant deaths in 1921 was 201 and in the last year reported it was only 48. Likewise, the stillbirths dropped from 106 to 35.

## BERLIN

*(From Our Regular Correspondent)*

April 19, 1930.

### A Law Pertaining to Proprietary Remedies

The Deutsche pharmakologische Gesellschaft and the Deutsche Gesellschaft für innere Medizin have addressed a petition to the federal minister of the interior, urgently demanding, on account of the appearance of serious and harmful manifestations in the production and sale of medical remedies, the promulgation of the law pertaining to proprietary medical remedies, which has been under consideration for many years. The happy-go-lucky treatment of medicines that has sprung up owing to the absence of federal regulation is today removed from the course dictated by reason. For purely medical reasons and likewise from the economic point of view, a selection of medical remedies must be maintained. Such a choice is, however, in principle possible only when a survey of the material from which the choice is to be made is feasible. This gives rise to the deduction that the sum total of medicaments placed at the disposal of the physician should be sufficiently limited so that a person adequately trained is actually able to keep in mind a survey of them all. In other words, the overproduction of medical remedies imperils a rational use of those remedies; for it is in the interest of a successful application of medical remedies that physicians collect first-hand experiences with those that they prescribe. The propaganda of the pharmaceutic houses exerts an overpowering influence on the practitioner. Like all effective advertising, the action on the physician is in the nature of a compelling suggestion. Then again, the voluminousness of the offerings are not the least of the means by which there are awakened in the mind of the physician the feeling of uncertainty, lack of confidence in himself, and fear of delay or the sense of not being up to date. Thus the soil is prepared for an increased susceptibility to the many extravagant promises in favor of new preparations. In addition, the pharmaceutic houses do not hesitate to advertise their products directly to the public, so that not infrequently it is the patients themselves who demand of physicians the prescribing of a new remedy. Only physicians who have a great reputation are usually strong enough to resist without endangering their economic position. The overproduction of medical remedies is thus a great damage to the legitimate use of approved remedies. A more rapid production than is consistent with careful therapeutic testing by qualified physicians cannot be a benefit to patients. Further, many remedies are marketed under different names, and the physician is expected to know the multitude of names for the same substance, and never to confuse one with the other. Not infrequently "new" preparations are created merely by the invention of a new name, the composition of the remedy remaining essentially the same as before. Especially those medicaments that act as analgesics and sedatives—namely, the so-called antineuralgics and the hypnotics—are sure of finding ready buyers, whatever form the mixtures may take; for their action is assured in advance, whereas any possible difference in the intensity of the action, as compared with similar preparations, can seldom be accurately determined. In two years (from the summer of 1926 until the summer of 1928), no fewer than thirty-five new names were counted under which "new" combinations of "antineuralgics" and hypnotics had been introduced. That is equal to one "new" medical preparation, with practically the same action, every three weeks. The multitudinous offerings whet the appetite of patients until it is out of all proportion to the demonstrable benefit. Alongside valuable products, which contain previously unknown substances and through which the armamentarium of the physician is extended, there are products whose composition is not declared or is not given correctly or completely; whose composition and dosage are not uniform in various samples bearing the same trade-mark; or which constitute unsuitable, senseless or even injurious combinations; whose price is inordinately high, and concerning the therapeutic value of which, necessarily, false or grossly exaggerated claims are made. Between these extremes many different classes of products may be found. Especially the particularly injurious proprietaries of a lower grade can be combated more vigorously than would be possible without consideration of quality differences. A board (*behörde*) does not appear to serve well as a scrutiny body of first instance. What is needed is an examining body after the pattern of the Council on Pharmacy and Chemistry of the American Medical Association, or the Rijks-Institut voor pharmacotherapeutisch Onderzoek. The Deutsche Arzneimittel-Kommission, a body of experts that already exists in Germany, having sprung into existence through private initiative, would be in a position to serve as a center for the collection and scrutiny of pertinent data. This body consists of clinicians, pharmacologists, practicing physicians and pharmacists, some of whom are representatives of scientific or professional societies. The purpose of the body is to make a selection from the mass of material offered on the pharmaceutic mart and to offer it as the Arzneiverordnungsbuch der deutschen Arzneimittel-Kommission to the physician in suitable form. With the adoption of the proposed suggestions, the present abuses could be suppressed without much difficulty and the trade in proprietary remedies could be confined to appropriate limits. It would not cause any serious damage to the true interests of the sick if the barriers thus erected should exclude from the market as unsuitable 99 per cent of the "specialties" at present offered for sale. However, without energetic action on the part of the central government, all endeavors of the university professors and of the medical societies looking toward a rational use of medicaments would be in vain, and the present condition of affairs will go from bad to worse. Therefore, in the interest of rational pharmaceutics, a law controlling the marketing of remedies should be enacted whereby the production of useless and dispensable medicaments shall be effectively checked.

### Infant Psychology

In her address before the association of the directing physicians of the Gross-Berliner Säuglings- und Kleinkinder-Fürsorgestellen, Prof. Charlotte Bühler of Vienna spoke on the subject of psychologic tests applied to young children in the Säuglings- und Kleinkinder-Fürsorgestellen. The Säuglings-Fürsorgestellen that were first established in Berlin twenty-five years ago exerted a favorable influence on the bodily development of children entrusted to them, but they did not collect observations on their psychic development. Hence, the investigations of Charlotte Bühler in the Psychologic Institute of the University of Vienna are influential. Tests that she has worked out from observations on sixty children make it possible

to distinguish the manifestations of psychic life that are conditioned by development from within from manifestations conditioned by the outside world. It has been discovered that, during the first year of child life, every month presents different stages of development, whereas, during the second year, essentially new reactions in the mental development appear only every three months. In the first year of life, a child that shows a difference in development of ten days may be regarded as normal; in the second year, a child may be considered as normal if he shows a difference of two months. By comparing the unequal departures from normal, one can distinguish those conditioned by the child's milieu from those conditioned by its aptitudes and reach conclusions as to whether or not the child needs medical treatment or the application of welfare measures. An instructive film showed how such experiments are carried out with children.

### Physiology and Medical Education

Prof. W. Trendelenburg, occupant of the chair of physiology, discussed before the Berliner Medizinische Gesellschaft the scope of physiologic instruction in medical education. In keeping with the development of physiologic chemistry, the department of chemistry at the Physiologisches Institut in Berlin has been made an independent Physiologisch-Chemisches Institut. The instruction in the two institutes will, however, continue to constitute a unit. On the one hand, physiology is closely associaed with the natural sciences, and, on the other, it has a fundamental importance in the training of physicians. The physiologist must not only take an intelligent view of the practical questions of physiology; he must be able to think in terms of the practical problems of the physician. Contrary to the allegation that physiologic instruction at German universities is not sufficiently attentive to the needs of physicians, virtually all physiologists are striving to take practical attitudes on modern questions of physiology. That in many fields of physiology research on animals is in the foreground lies in the nature of the case. The physiology of man can be studied, to a certain extent, by observation of other animals. Under things of practical importance we may include what is of immediate medical value and what is indirectly of value. General biologic problems are coming to have for the physician an ever increasing importance, and it would be an entirely wrong idea to draw the lines of a medical education still closer than they are drawn at present. Practical instruction in physiology today rests on an entirely different basis from what it did formerly. The difficulties of obtaining additional funds stand in the way of its extension. The goal today is a general development of skill and the power of observation, as well as of exact methodical research. Present-day instruction in physiology can be expected to contribute no small portion toward the complete task of medical training.

### Reduced Consumption of Brandy

The federal administration for the brandy monopoly reports that, for the year ended Sept. 30, 1929, the production of brandy was in excess of the production of the previous year, which was the greatest since the existence of the government monopoly. This heavy production was due in part to the large potato crop and in part to the increased participation of the agricultural distilleries. The total amount of brandy warehoused was 3,009,669 hectoliters of wine spirits (last year 2,596,791 hectoliters). The sales at the regular selling price, consisting chiefly of beverage brandy, show a slight decline, without adjustment. In reality, the decrease in the consumption is much greater than appears, because the legislative enactments that fall within the fiscal year have caused many dealers to lay in supplies in advance of local sales. It is already evident that the fiscal year 1929-1930 will show a further decrease, since the first four months of the present year show a decline of 40 per cent in sales for beverage use, as compared with the corresponding period of the fiscal year 1928-1929. The decrease in sales is due to the general decline in the consumption of alcoholic beverages.

### The Determination of Blood Groups

The subcommission appointed by the federal health council for the scrutiny of the problems involved in the determination of blood groups has submitted the following unanimous report:

> In the opinion of experts, the determination of blood groups, if carried out by skilled research workers, is a reliable examination procedure, which may be used to advantage for legal purposes (for the examination of blood spots and for the exclusion of suspected paternity). In many cases, the determination of blood groups will clarify a situation better than could be accomplished by any other procedure. If in such cases this method is not employed, the establishment of the true facts and the exoneration of a person wrongfully accused may be impossible.

Criteria for the technic of the determination of blood groups are being prepared by the subcommission.

### Health Poster Contest

An exhibit of health posters and drawings produced by the pupils of the schools of Greater Berlin was recently held. The posters were the outgrowth of a contest organized by the federal committee on health education. The purpose was to stimulate school children to reproduce in pictures the knowledge of hygiene gained in school, and thus bring to the general public the importance of hygiene. The exhibit gave evidence of widespread drawing talent and of excellent observation of hygienic needs. Health booklets with witty verses and drawings showed also the sense of humor inherent in Berlin's school children. The contest was further extended by written compositions on hygiene. It is planned to exhibit the Berlin posters and drawings in the provinces.

### Increase in the Number of Physicians

The final report of the last census shows that there were 45,332 physicians in Germany, or 35 per cent more than in 1913. In 1928, the number reported was 47,338. The increase in women physicians is conspicuous (2,562 as against 250 in 1913). The number of dentists has likewise increased. There are now 34,000 dentists, 4,300 of whom are women.

### Welfare Work Among Berlin's Children

The welfare work among Berlin's 65,000 underprivileged children is a stupendous task. For 19,500 orphans, 6,000 wards and 8,000 children in the welfare departments, the city of Berlin has to furnish everything needed. In addition, there are the auxiliary measures (school lunches, vacation colonies and the upkeep of summer playgrounds). The city of Berlin, the Red Cross and welfare organizations have a large number of homes in which children in need of rest and relaxation are domiciled for varying periods. Fifteen of these homes are on the shores of the Baltic Sea; five are on the North Sea. The city has fourteen homes in mountain regions and seven country homes; in addition, a home in Rothenfelde for children in need of salt baths. The largest home is at Heuberg, Baden, in the Swabian Alps and provides accommodations for 3,000 children, summer and winter. A second large home for 1,400 children is located in Weilmünster, in the Taunus region. In all the homes taken together, that are at the disposal of the Landesjugendamt and the city of Berlin, in summer 10,306 and in winter 7,340 children can be quartered. The cost of their entertainment ranges between 2 and 3 marks (from 48 to 72 cents) a day. In addition, in the forest camps a large number of Berlin children who have to spend their vacation at home can be given outings. This chapter in the welfare work among Berlin's needy children shows the importance of juvenile work in general in the city of Berlin, which, in spite of the economic crisis, is carried out at least in its most necessary features.

## Marriages

EMMA KATHARINE BAYLIS, Greensboro, N. C., to Mr. Charles Pattison MacInnis of Binghamton, N. Y., April 22.

RAYMOND A. FLEETWOOD to Miss Cleo Vera Watson, both of Indianapolis, April 22.

ROBERT N. DOWNS, JR., to Miss Melba Taylor Dingle, both of Philadelphia, May 14.

HOBART W. DODSON, Nanticoke, Pa., to Miss W. Frances Bassler in March.

GEORGE K. LEWIS, St. Louis, to Miss Fern Drake, March 8.

## Deaths

**Louis Abramson** ⊕ Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; member of the American College of Surgeons; past president of the school board of Caddo Parish; on the staff of the North Louisiana Sanitarium, where he died in April of cerebral hemorrhage, aged 60.

**William L. Allen** ⊕ Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1881; member of the American College of Surgeons; past president of the Iowa State Medical Society and the Scott County Medical Society; for many years on the staff of St. Luke's Hospital; aged 71; died, May 8, of heart disease.

**Mary Evelyn Brydon** ⊕ Richmond, Va.; Woman's Medical College of Pennsylvania, Philadelphia, 1911; director of the bureau of child health of the state department of health; formerly director of physical welfare at the Farmville (Va.) State Teachers' College; aged 51; died, April 13, of complications following pneumonia.

**Freeman Allen** ⊕ Boston; Harvard University Medical School, Boston, 1899; formerly lecturer on anesthesia at his alma mater; member of the Associated Anesthetists of the United States and Canada; on the staff of the Massachusetts General Hospital; aged 59; died, May 3, of heart disease.

**Cyril Thomas Wyche,** Prosperity, S. C.; College of Physicians and Surgeons, Baltimore, 1882; formerly chairman of the school board and mayor of Prosperity; for fourteen years member of the state legislature; aged 72; died, May 4, of arteriosclerosis and cerebral hemorrhage.

**Guy T. Goodman** ⊕ Mansfield, Ohio; Medical Department of Western Reserve University, Cleveland, 1898; formerly member of the city board of health, county coroner and health officer; on the staff of the Mansfield General Hospital; aged 58; died in April of cerebral hemorrhage.

**David Columbus Turnipseed, Jr.** ⊕ Spokane, Wash.; Medical Department of the Tulane University of Louisiana, New Orleans, 1904; surgeon, U. S. Public Health Service and medical director of district number 2, Indian Service; aged 49; died suddenly, April 25.

**Charles Wilson Parsells,** Ramsey, N. J.; Medical Department of Columbian University, Washington, D. C., 1902; formerly member of the board of health and medical inspector for the public schools of Ramsey; aged 57; died, April 29, of angina pectoris.

**Delbert Elias Hoover** ⊕ Warren, Ohio; Western Reserve University School of Medicine, Cleveland, 1895; member of the American College of Surgeons; served during the World War; on the staff of the Warren City Hospital; aged 58; died, April 12.

**Benjamin P. Bradburn** ⊕ Lincoln, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1891; past president of the Logan County Medical Society; aged 65; died, May 2, in the Vanderbilt University Hospital, Nashville, Tenn., of heart disease.

**Richard Jordan Noble,** Selma, N. C.; Kentucky School of Medicine, Louisville, 1875; member of the Medical Society of the State of North Carolina; aged 76; died, April 27, of pneumonia, following injuries received in an automobile accident.

**Charles M. Decker,** San Antonio, Texas; Starling Medical College, Columbus, 1886; member of the State Medical Association of Texas; aged 69; died, April 14, at the Santa Rosa Hospital, of lobar pneumonia and infectious agranulocytosis.

**William E. Loughridge** ⊕ Mansfield, Ohio; Miami Medical College, 1880; formerly bank president; on the staff of the Mansfield General Hospital; aged 72; died, April 26, of cerebral hemorrhage, chronic nephritis and arteriosclerosis.

**Charles Day Bennett** ⊕ Newark, N. J.; Medical Department of Columbia College, New York, 1881; chairman of the publication committee, *Journal of the Medical Society of New Jersey;* aged 73; died, May 11, at his home in Summit.

**Lewis A. Bradbury** ⊕ Jefferson Barracks, Mo.; University Medical College of Kansas City, 1907; served during the World War; chief of the surgical department of U. S. Veterans' Hospital 92; aged 47; died, March 26, of heart disease.

**Radcliffe Cheston** ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1883; formerly on the staffs of the Chestnut Hill Hospital and the Germantown Hospital; aged 68; died, May 12, of angina pectoris.

**Edmiston Darragh** ⊕ Bisbee, Ariz.; Northwestern University Medical School, Chicago, 1902; served during the World War; aged 57; on the staff of the Calumet and Arizona Hospital, where he died, April 21, of nephritis.

**William Barnes** ⊕ Decatur, Ill.; Harvard University Medical School, Boston, 1887; member of the American College of Surgeons; formerly on the staffs of St. Mary's Hospital and the Wabash Hospital; aged 70; died, May 1.

**John Grant Keeler,** Rochester, N. Y.; University of Buffalo School of Medicine, 1897; member of the Medical Society of the State of New York; aged 57; died, April 17, of pulmonary tuberculosis and chronic nephritis.

**James Taylor Black** ⊕ Marion, Ill.; St. Louis College of Physicians and Surgeons, 1909; physician in charge and owner of the Marion Hospital; aged 51; died in April of rheumatic heart disease and mitral valvular disease.

**Hogan J. Ring,** Ferndale, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; member of the California Medical Association; aged 79; died, April 26, in San Francisco, of carcinoma of the colon.

**Lawton Stickney Brooks** ⊕ Springfield, Mass.; Medical Department of Columbia College, New York, 1869; for many years on the staff of the Springfield Hospital; aged 82; died, April 26, of pulmonary tuberculosis.

**Albert Joseph Carrico** ⊕ Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1896; on the staff of the Georgetown Hospital; aged 57; died, April 19, at the Johns Hopkins Hospital, Baltimore.

**Gessel Wolf** ⊕ Brooklyn; Albertus-Universität Medizinische Fakultät, Königsberg, Prussia, Germany, 1887; on the staffs of the People's and Unity hospitals; aged 65; died, April 29, of carcinoma of the liver.

**Lemuel Byrd Short** ⊕ East St. Louis, Ill.; St. Louis University School of Medicine, 1906; on the staffs of the Christian Welfare Hospital and St. Mary's Hospital; aged 47; died, May 5, of bronchopneumonia.

**John J. Mechem,** Masontown, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1900; member of the Medical Society of the State of Pennsylvania; aged 53; died, April 10, of carcinoma of the liver.

**John P. Longwell** ⊕ Wellsboro, Pa.; Chicago Homeopathic Medical College, 1893; aged 61; died, April 13, at the Packer Hospital, Sayre, of carcinoma of the rectum, perforated duodenal ulcer and diabetes mellitus.

**Frank George Salter** ⊕ Pierce, Neb.; Trinity Medical College, Toronto, Ont., Canada, 1889; past president of the Madison Five County Medical Society; aged 62; died, March 30, of heart disease.

**John Rice Anderson,** Martinsville, Va.; College of Physicians and Surgeons, Baltimore, 1883; member of the Medical Society of Virginia; aged 70; died, March 11, in Roanoke, of chronic encephalitis.

**Regis H. Grace** ⊕ Dennison, Ohio; Eclectic Medical Institute, Cincinnati, 1899; member of the board of health; on the staff of the Twin City Hospital, where he died, May 1, of pneumonia, aged 53.

**John J. Prowell,** West Point, Miss.; Medical Department of the University of Louisiana, New Orleans, 1873; aged 79; died suddenly, April 21, of acute dilatation of the heart and chronic myocarditis.

**Samuel M. Mehaffey,** Dennison, Ohio; Baltimore Medical College, 1892; at one time a druggist; formerly mayor of Dennison, Bowerston and Kimbolton; aged 67; died, April 11, of heart disease.

**William A. Ryan,** Scranton, Pa.; Medico-Chirurgical College of Philadelphia, 1911; member of the Medical Society of the State of Pennsylvania; aged 44; died, April 23, in the Mercy Hospital.

**Albert L. Lane,** Wichita Falls, Texas; Memphis (Tenn.) Hospital Medical College, 1909; served during the World War; aged 50; died, April 16, in Rochester, Minn., of hypertension and myocarditis.

**George F. Bartholomew,** Newport, Neb.; University of Nebraska College of Medicine, Omaha, 1902; aged 59; died, April 28, in a hospital at Ainsworth, of hemorrhage due to gastric ulcer.

**Samuel Conway Crow,** Norfolk, Va.; University of Michigan Medical School, Ann Arbor, 1898; served during the World War; aged 55; died, April 11, of hypertrophic cirrhosis of the liver.

**William Henry Wilson,** Kankakee, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; member of the Illinois State Medical Society; aged 71; died, April 30, of heart disease.

**Richard C. Belt,** Milford, Ohio; Medical College of Ohio, Cincinnati, 1873; member of the Ohio State Medical Association; aged 80; died, April 19, in the Christ Hospital, Cincinnati, of mastoiditis.

**George Laughton Pope,** Louisville, Ky.; University of Louisville School of Medicine, 1883; member of the Kentucky State Medical Association; aged 75; died, April 9, of carcinoma of the bladder.

**David Keene Briggs** ⊕ Blackville, S. C.; College of Physicians and Surgeons, Baltimore, 1884; aged 67; died, April 10, in the Columbia (S. C.) Hospital, of gangrene, following embolism.

**John Vernon White,** Coronado, Calif.; Victoria University Medical Department, Coburg, Ont., Canada, 1880; formerly a practitioner in Detroit; aged 71; died, recently, of Parkinson's disease.

**Linnaeus S. Savage** ⊕ Washington, D. C.; Baltimore Medical College, 1893; for many years on the staff of the Sibley Hospital, where he died, May 4, aged 58, of chronic myocarditis.

**Alfred Dale Covey,** Detroit; Hahnemann Medical College and Hospital, Chicago, 1890; aged 60; died, April 26, in St. Mary's Hospital, of a skull fracture received in a fall.

**Harlan Page Cole,** New York; Chicago Medical College, 1871; New York Homeopathic Medical College, 1872; aged 78; died suddenly, April 20, of chronic myocarditis.

**William Adam Koch,** Bucyrus, Ohio; Cleveland University of Medicine and Surgery, 1895; aged 57; was found dead in his office, April 26, of cerebral hemorrhage.

**Millard F. Marks,** Valley Falls, Kan.; Kansas City Medical College, 1888; formerly member of the state legislature; aged 71; died, April 24, of cerebral hemorrhage.

**Vincent Joseph Gallagher,** Brooklyn; Medical Department of Columbia College, New York, 1892; aged 60; died, May 10, of heart disease and cirrhosis of the liver.

**Elmer L. Mater,** Dowagiac, Mich.; Chicago Medical College, 1890; member of the Michigan State Medical Society; aged 63; died, April 18, of heart disease.

**Charles Wesley Gessler** ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1867; aged 84; died, May 1, of cerebral arteriosclerosis.

**James A. Stephens,** Cleveland; Homeopathic Hospital College, Cleveland, 1881; aged 71; died, April 17, of hypertrophy of the prostate and coronary occlusion.

**Louis C. Benerman,** Philadelphia; Jefferson Medical College of Philadelphia, 1887; served during the World War; aged 69; died, May 7, of myocarditis.

**Johan Mathias Ekrem,** Crookston, Minn.; Medical Department of Hamline University, Minneapolis, 1903; aged 63; died, April 26, of cerebral hemorrhage.

**Lorie W. Moore,** Lake City, S. C.; Medical College of the State of South Carolina, Charleston, 1910; aged 41; died, May 6, of carcinoma of the gallbladder.

**Richard Terrell Davis,** Fredericksburg, Va.; University College of Medicine, Richmond, 1894; aged 57; died, April 15, in Warsaw, of arteriosclerosis.

**John A. McAfee,** Comanche, Okla.; National University Medical Department, Washington, D. C., 1894; aged 75; died, April 15, of cerebral hemorrhage.

**Reynold Jerome Kirkland,** Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1879; aged 74; died, April 23, of heart disease.

**William Whitney Hawkes** ⊕ New Haven, Conn.; Yale University School of Medicine, New Haven, 1881; aged 72; died, April 12, of angina pectoris.

**Frederick William Streib,** Cincinnati; Northwestern University Medical School, Chicago, 1929; aged 33; died, March 23, of pulmonary tuberculosis.

**Verne Calvin Graber** ⊕ Lexington, Ky.; State University of Iowa College of Medicine, Iowa City, 1920; aged 37; died, April 13, at Iowa City, Iowa.

**Llewellyn O. Howe,** Erie, Pa.; Jefferson Medical College of Philadelphia, 1898; aged 65; died, April 3, of angina pectoris and rheumatic endocarditis.

**Garrett Robert Barringer,** Alhambra, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; aged 73; died, April 12, of nephritis.

**Andrew Richard Farrell,** Toronto, Ont., Canada; Trinity Medical College, Toronto, 1900; served during the World War; aged 59; died, March 25.

**William L. Griffith,** Pedro, Ohio; Miami Medical College, Cincinnati, 1893; aged 72; died, April 21, of injuries received in an automobile accident.

**Wilie W. Walker,** Dickson, Tenn.; University of Nashville Medical Department, 1898; aged 64; died, April 22, of carcinoma of the rectum.

**Timothy Roseberry Mason,** Columbus, Ohio; Starling Medical College, Columbus, 1885; aged 77; died, April 25, of carcinoma of the colon.

**John Symmonds Radway,** New York; Medical Department of Columbia College, New York, 1879; aged 72; died, April 4, of pneumonia.

**Clement Chapman Young,** New York; Bellevue Hospital Medical College, New York, 1874; aged 77; died, April 28, in the Seton Hospital.

**Roscoe N. Doyal,** Indianapolis; Medical College of Ohio, Cincinnati, 1892; aged 62; died, April 19, of bronchopneumonia and acute myocarditis.

**Isidore Gallant,** Bloomfield Station, P. E. I., University of Pennsylvania School of Medicine, Philadelphia, 1877; aged 78; died, February 10.

**Robert B. Crisler,** Flora, Miss.; Memphis (Tenn.) Hospital Medical College, 1899; aged 54; died, April 19, of cerebral hemorrhage.

**Hiram Winter,** Looneyville, W. Va.; University of Louisville (Ky.) School of Medicine, 1910; aged 50; died, April 13, of bronchiectasis.

**Albert F. Woll,** Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1896; aged 57; died, May 7, of angina pectoris.

**Maurice Wahrer,** Fort Madison, Iowa (licensed, Iowa, 1886); aged 72; died, March 7, of cardiorenal disease and diabetes mellitus.

**John B. Edwards** ⊕ Madison, Wis.; Jefferson Medical College of Philadelphia, 1881; aged 81; died, April 15, of arteriosclerosis.

**Robert F. J. Hussey,** Richmond Hill, N. Y.; Long Island College Hospital, Brooklyn, 1894; aged 63; died, April 24, of heart disease.

**Maurice Snow Gibbs,** Concord, Mich.; Detroit Homeopathic College, 1911; aged 41; died, April 27, of pulmonary tuberculosis.

**Samuel David Miller,** South Jacksonville, Fla.; Albany (N. Y.) Medical College, 1900; aged 59; died, April 2, of heart disease.

**Charles C. Ray,** Atlanta, Ind.; Medical College of Indiana, Indianapolis, 1892; aged 60; died, April 30, of cerebral hemorrhage.

**John E. Wilson,** Los Angeles; Jefferson Medical College of Philadelphia, 1895; aged 65; died, February 10, of chronic myocarditis.

**Thomas Julian Cleland,** Tampa, Fla.; Bellevue Hospital Medical College, New York, 1893; aged 61; died, February 4.

**Thomas J. Moss,** Atlanta, Ga.; Southern Medical College, Atlanta, 1886; aged 73; died, April 28, of cerebral hemorrhage.

**Henry H. Spiers,** Atwater, Ohio; Medical College of Ohio, Cincinnati, 1877; aged 79; died, April 13, of carcinoma.

**Orville R. Young,** Columbus, Ohio; Columbus Medical College, 1884; aged 75; died, May 8, of myocarditis.

**Frank M. Rains,** Medina, Tenn. (licensed, Tennessee, 1889); aged 76; died, March 1, of heart disease.

# Correspondence

## ETHYLENE ANESTHESIA IN INFANCY

*To the Editor:*—In THE JOURNAL, May 3, in answer to an inquiry on general anesthetics for children and infants, the statement was made that "many operations have been done with ethylene on children even as young as 1 year of age without any untoward results."

In THE JOURNAL, Feb. 9, 1924, I reported the use of ethylene in infants the oldest of whom was 35 days old.

JOHN S. LUNDY, M.D., Rochester, Minn.

## ABDOMINAL PAIN AT ONSET OF RHEUMATIC FEVER

*To the Editor:*—The abdominal pain arising at the onset or during the course of acute rheumatic fever has been the subject of much speculative comment among both cardiologists and pediatricians. A paper by Costedoat (*Bull. et mém. Soc. méd. d. Hôp. de Paris* **53**:1353 [Dec. 2] 1929) and a subsequent communication by Dr. J. D. Geissenger (THE JOURNAL, May 3, p. 1427) indicates the paucity of literature on this subject, which, strangely enough, is not unfamiliar, especially among physicians practicing in the Eastern seaboard cities of this country, where acute rheumatic fever is endemic.

At a meeting of the Metropolitan Medical Society held at the New York Academy of Medicine, Jan. 25, 1927, I reported a case of rheumatic pericarditis simulating an acute surgical condition of the abdomen. The patient was a child about 6 years old who was suddenly seized with epigastric pain while playing in the street; the pain, at first diffuse, localized itself within a few hours to the right lower quadrant and when seen by the family physician the patient presented an unquestioned picture of an acute surgical condition of the abdomen. The well marked rigidity of the lower abdominal muscles, especially on the right side, the exquisite tenderness under McBurney's point and the general condition of the child suggested acute appendicitis. Nausea, vomiting and distention developed shortly thereafter and the patient was admitted to the Beth David Hospital for operation.

At 10 p. m., which was about twelve hours after the initial symptoms, the patient's temperature was 104.2 F., respirations 34, pulse 160, and leukocytes 10,400 with 78 per cent polymorphonuclears. The tachycardia and the poor quality of the heart sounds led to a cardiologic consultation; the greatly widened area of superficial cardiac dulness and the peculiar quality of the heart sounds suggested to me an acute pericarditis. The lungs were essentially clear throughout, but the abdomen indicated the need of immediate surgical intervention. An emergency roentgenologic examination showed the cardiac shadow to be considerably widened; electrocardiographic studies did not yield much information. In view of these observations I suggested delaying the operation; on the following day the child, while still nauseated and vomiting, complained of pain in the right ankle, which subsequently became very red and swollen. The question of operative intervention was still debated, the opinion being that while it was true that the child had the signs of an acute rheumatic pericarditis and arthritis she still had appendical inflammation. Delay for another twenty-four hours showed a fully developed picture of acute rheumatic fever with a tremendous pericardial effusion. Percussion of the heart at this time and roentgen examination showed that it extended from nipple to nipple. The child was sick for about six and a half weeks, during which time there was another abdominal syndrome which in every respect resembled the first. Operative intervention was, however, withheld. The child recovered and was left with a residual mitral disease.

At the time that this case was presented (1927) I could find no reference in the literature to this condition but many of those present at the meeting had seen similar cases, especially the pediatricians, and I was forced to assume that the condition was apparently not uncommon.

I agree with Dr. Geissenger that none of the standard textbooks describe the condition; Dr. Carey Coombs, for example, devotes a single paragraph to the subject (Rheumatic Heart Disease, 1924, p. 234). Since reporting this case I have had the opportunity of seeing four others; one of the patients had been operated on and a subacutely inflamed appendix removed. The patient had a convalescence extending over eight months, with polyarticular as well as polyvalvular involvement.

The late Dr. G. A. Friedman suggested that the appendix in these cases behaved like a "true abdominal tonsil" and that, like the acute tonsillar condition often seen in rheumatic fever, it too might show signs of inflammation. If this conception is true, the operation is doubly contraindicated during such an acute rheumatic attack.

ALBERT S. HYMAN, M.D., New York.

# Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

## POSTOPERATIVE PNEUMONIA — MASSIVE COLLAPSE OF LUNG

*To the Editor:*—1. As postoperative respiratory complications following ether anesthesia appear to be much more common during the winter, is this due altogether to greater susceptibility on the part of the patient, at this season, or to other causes? Is the temperature of the ether a factor? What prophylactic measures should be taken? 2. What is the etiology of massive collapse of the lung? What is the course and treatment? Please omit name.

M.D., Canada.

ANSWER.—1. Pneumonia appears more frequently during the winter and doubtless the added postoperative lessened resistance adds to the susceptibility to the infection during cold weather. According to extensive researches on warmed ether vapor, it has been definitely settled that there is little value in the method, as inhaled ether reaches body temperature or nearly so by the time it passes through the upper air passages. Experiments have shown that a concentrated ether vapor destroys lung epithelium by its direct action. So far as the anesthetic is concerned, perhaps the two most important prophylactic measures are a mild concentration vapor and the maintenance of body heat during and following operation. It is advisable to have the operating table covered by thick pads and the patient well covered with only the field of operation exposed. Covering of adjacent surfaces with wet towels and allowing the patient to lie on a wet table are open to considerable objection, especially in cold weather. Infants and feeble children require special care to prevent loss of body heat.

2. Massive collapse of the lung is seen most often after abdominal operation. It has occurred most frequently after ether anesthesia but also after gas-oxygen anesthesia. The right lung is the one most frequently involved. The earlier observers, such as Rose-Bradford, were inclined toward a neurogenic theory of causation. They believed it to be a reflex nervous phenomenon. The later observers, particularly those in the United States, believe that the collapse is primarily due to obstruction of a bronchus or several bronchi by tenacious mucus. There are other contributing factors, including limited excursion of the diaphragm and of the throat, and the position of the patient during or following operation, causing diminished aeration of the pulmonary tissue and favoring stagnation and drainage of the secretion into the dependent lung. The onset may be sudden, but usually is rather insidious. There is a moderate rise in temperature and pulse, the respiration is seldom above 30, and dyspnea is not marked. There is little cough. A small amount of tenacious mucopurulent material is brought up with great difficulty. The lung becomes completely reinflated in about ten days even if treatment is not instituted. Hyperventilation of the lungs during and just after operation with carbon dioxide and oxygen, frequent change of the patient's

position, pulmonary exercises, and avoidance of strapping the throat aid in prevention. Most patients get well when left alone. The postural treatment, advocated by Sante, consists of turning the patient and keeping him on the well side. The dyspnea occasioned by this maneuver results in coughing and bringing up of much mucus. Reinflation has taken place at times with great rapidity. Jackson and Clerf of Philadelphia have treated more severe cases with urgent dyspnea by means of bronchoscopic aspiration of mucus. In their hands this treatment has proved most effective.

## SERENIUM

*To the Editor:*—Will you kindly give any available information in re the Squibb product Serenium (ethoxy diamino azo benzene hydrochloride)? Do we have any controlled work showing the degree of concentration of this substance in the urine by oral administration of 0.3 Gm. daily, and to what extent is such a concentration bactericidal?

M.D., Illinois.

ANSWER.—According to advertising material sent by E. R. Squibb & Sons to physicians, "Serenium" is ". . . the result of a search for a compound that would be superior to other chemotherapeutic agents in the treatment of genito-urinary infections . . . synthesized by Dr. Ivan I. Ostromislensky. . . ." The product is stated to have the composition mentioned in the inquiry. The circular recites various more or less ideal qualities to be desired in such a preparation, leaving the impression that "Serenium" possesses these. "Serenium" is stated in the circular to have been subjected to extensive clinical trial, as a result of which it has been found to have ". . . a definitely beneficial influence on the course of gonorrheal urethritis and other infections of the genito-urinary tract . . . shortens the course . . . and prevents complications . . . introduced as the equal, and the probable superior, of any other genito-urinary antiseptic now available."

For the claims made, the evidence is slight indeed. Squibb & Sons have apparently abandoned, so far as this preparation is concerned, the conservatism that has characterized the house for nearly three quarters of a century. The advertising by which physicians are invited to use the product does not present any real proof of merit. There is nothing apparently in medical literature concerning the clinical use of "Serenium." Squibb and Sons have not requested an examination of the product by the Council on Pharmacy and Chemistry.

## HYDROSTATIC TEST FOR STILLBIRTH

*To the Editor:*—I would like information concerning the conclusiveness or inconclusiveness of the hydrostatic test for still-born babies; if possible, reports or references where I can secure such reports on the statement that "air in the lungs is no proof that the child was born alive," and medicolegal data to substantiate the possibility of stillbirth. Have we any definite ways of proving that a child was born alive? Is there any book written on the subject of stillbirth? Kindly do not mention my name.

M.D., New York.

ANSWER.—Ballantyne divided new-born dead babies into two classes; those which were born with some signs of life he called stillbirths and those with absolutely no such signs he called deadbirths. He believed that occasionally a still-born child could be saved. However, most authorities consider the terms dead-born and still-born to be identical and use them to designate babies born dead. Legally, the child is not "born" until completely extruded.

It is generally accepted that if the lungs of a new-born child float freely in water after being removed in a special way from the thorax, this indicates that respiration has taken place and the child was born alive. In "Legal Medicine and Toxicology," by Frederick Peterson, W. S. Haines and R. W. Webster (ed. 2, Philadelphia, W. B. Saunders Company **2**:116, 1923) is found the following statement: "The lungs are placed in a basin of cold, clean water. In case they float freely, respiration has undoubtedly taken place; if the lungs sink, then the test is not decisive. The lungs, under such circumstances, are to be incised and note taken as to whether they crepitate or not, and whether air bubbles appear when parts are compressed below the surface of the water. Furthermore, the lungs must be separated into lobes, the lobes into minute pieces, and the hydrostatic test again applied. In this way it may be possible to determine that air has gained entrance into certain parts of the lung in sufficient quantity to prevent small pieces from sinking."

Likewise, Fritz Reuter in Halban und Seitz's "Biologie und Pathologie des Weibes" (**8**, 3, p. 1245), in an article on "Forensic Gynecology," agrees that in spite of the strong and repeated opposition to the hydrostatic test for still-born babies it is nevertheless reliable, if properly carried out. This article contains a great deal of valuable information from the medicolegal aspect of the problem, particularly as applied to Germany and Austria. The author discusses the various objections made against the hydrostatic test on the ground that air may be found in the lungs of dead-born children because of artificial respiration, inspiration of air during labor and decomposition, and he points out the fallacies of these objections. He also emphasizes the value of demonstrating air in the gastro-intestinal tract as an aid in the determination of stillbirths.

Definite signs of life immediately after birth are: opening of the eyelids, quivering movements of the muscles around the mouth and nose, drawing together of the face as if the child is about to cry, opening of the mouth, crying, beginning inspiration of air, urination, and the passage of meconium. Since a child sucks in air during the first inspiratory effort after it leaves the birth canal, the evidence of extra-uterine life depends, in practically all cases, on the demonstration that inspiration of air has taken place. The only tests that have proved to be reliable are the pulmonary and the gastro-intestinal tests. The latter depends on the fact that, with the first inspiratory efforts made by the child, air enters the esophagus and stomach. By means of peristalsis, air is propelled from the stomach through the duodenum into the small and large intestines.

At the end of Reuter's article there is an extensive bibliography, which contains many references on the medicolegal aspect of stillbirths.

## CHRONIC SALICYLISM

*To the Editor:*—What effect, if any, would the taking of salicylates in the form of aspirin for four years on an average of sixty grains a day have on vision or brain tissue?

HARRY AINSWORTH, M.D., Thomasville, Ga.

ANSWER.—Chronic salicylism has been known to produce symptoms of nervous depression, often difficult of recognition. Visual disturbances, like muscae volitantes or amblyopia, may occur but are less common than with quinidine.

## UNNA'S PASTE FOR VARICOSE ULCER

*To the Editor:*—Kindly inform me relative to the use of Unna's paste dressing in the treatment of crural varicose ulcer. What is the composition of the paste and how is it applied? Please omit name.

M.D., Wisconsin.

ANSWER.—There are various formulas given for Unna's zinc-gelatin paste. A useful, rather firm paste has the following ingredients: gelatin, 100; zinc oxide, 100; glycerin, 400; water, 400. The water and gelatin are allowed to stand over night. Then this is heated on a water bath to boiling and the zinc oxide and glycerin, previously rubbed up to a smooth mass, are added and the boiling is continued while the mixture is stirred continuously for about fifteen minutes.

As a preliminary to the application, the leg is shaved and cleansed with soap and water. The zinc-gelatin paste is melted on a water bath and the paste is applied, not too hot, with a wide camel's hair brush. Before it sets, a spiral layer of bandage is applied and a second coat of the paste is smoothed over this. The process is repeated until the desired rigidity is obtained. The dressing is usually applied up to the knees.

## EFFECTS OF PREVIOUS INJECTIONS OF SERUM ON WASSERMANN TEST

*To the Editor:*—Have you any information that a Wassermann test is affected in any way by the administration of animal serums a week or two before the test is made?

W. M. MCRAE, M.D., Little Rock, Ark.

ANSWER.—Sachs, A. Klopstock and Weil (*Deutsche med. Wchnschr.* **51**:589 [April 10], 1017 [June 19] 1925; *Klin. Wchnschr.* **5**:928 [May 21] 1926) made a series of intravenous injections in rabbits of pig serum along with pure lipoids or with alcoholic extract of rabbit organs, and the serum of these rabbits gave a positive Wassermann reaction, lipoids being used as antigen.

Brandt, Guth and Müller (*Klin. Wchnschr.* **5**:68 [Jan. 8] 1926) later injected rabbits intravenously with pig serum alone. The serums of the rabbits gave either a negative reaction or a weak positive with antigens which reacted in strong positives with syphilitic serums. They reported similar results with the serums of rabbits which they injected with pig serum plus alcoholic extract of lipoids. Sach, A. Klopstock and Weil, in criticizing this work, complained that the data were insufficient. Their belief is that lipoids injected alone or proteins injected alone do not produce a positive Wassermann reaction but that injection of lipoid plus protein, as pig serum, does induce in the

serum of the animals an antibody that gives a positive Wassermann reaction.

Artom (*Policlinico* [sez. prat.] **31**:1611 [Dec. 8] 1924) injected 5 cc. of milk intramuscularly in seventy-one syphilitic patients who were Wassermann negative and obtained a reappearance of the positive phase in twenty-six (35 per cent). He injected 100 nonsyphilitic patients, all of whom remained negative. Milk contains both protein and lipoid.

F. Klopstock (*Deutsche med. Wchnschr.* **51**:1701 [Oct. 9] 1925) injected rabbits intravenously with milk and induced a positive Wassermann reaction.

Green (*J. Lab. & Clin. Med.* **9**:80 [Nov.] 1923), Kilduffe (*Arch. Dermat. & Syph.* **5**:207 [Feb.] 1922) and Kolmer (Serum Diagnosis by Complement Fixation, p. 461) have all done a large amount of work on conditions and drugs which at one time or another have been thought to give false positive Wassermann reactions, but in the long list of conditions mentioned there is no mention of the injection of animal serums as ever having been considered a source of positive Wassermann reactions.

Physicians connected with institutions of infectious diseases where immune serums are administered do not report false positives in the Wassermann tests.

## SACCHAROSE IN URINE

*To the Editor:*—Some time ago a patient was referred to our laboratory for urinalysis. The urine had an abnormally high specific gravity, 1.100. Sugar (dextrose) was absent; chlorides, phosphates and other salts, inorganic and organic, usually present in urine, were normal. When the urine was boiled with some hydrochloric acid it was found that it contained about 25 per cent of saccharose. The woman was told to abstain from sweets and come back in five days. The urine still had the same high specific gravity. The blood sugar was normal, 110 mg. of dextrose per hundred cubic centimeters. A test for saccharose in the blood was negative. This patient has been seen in the last two years by many physicians. Every one was astonished at the abnormally high specific gravity and unable to explain its cause or to reduce it. A search through literature was unsatisfactory. There is mention of "hysterical patients who have added cane sugar to their urine in order to deceive the doctor," or of patients who have eaten large amounts of sweets, but these two possibilities may be disregarded in our case. Where could we find information on that subject? Please omit name.

M.D., New York.

ANSWER.—It is almost impossible to conceive of this condition arising as a metabolic phenomenon. It is true that if saccharose gets into the blood stream it will be passed as such without affecting the "blood sugar value," which simply measures the amount of circulating dextrose. A condition as anomalous as this certainly should be placed under hospital observation for two reasons: to prove that the saccharose has not been added by the patient, and, if there is a true metabolic condition, to study its nature in detail.

## USE OF THYROID IN OBESITY

*To the Editor:*—Please tell me something of the administration of thyroid for obesity, as to dosage and probable results. I am beset by a patient who knows that a friend of hers used it successfully and without ill effects. Please use initials only.

M.D., Louisiana.

ANSWER.—The use of thyroid in obesity should always be controlled by a previous basal metabolism test. If this is normal or subnormal, it is safe for a physician to use thyroid. There is no exact dosage available, and the best practice is to start with small doses of desiccated thyroid (Thyroideum, U. S. P.), gradually increasing. The small dose would be approximately 0.03 Gm., or one-half grain, twice a day. The patient should be seen frequently by the physician, who must keep a sharp lookout for fast pulse, nervousness or other symptoms resulting from thyroid stimulation. It is practically useless for an obese individual to expect reduction by thyroid unless his diet is restricted, and when dietary restrictions are followed thyroid is not needed as frequently.

## TREATMENT OF PHOSPHATURIA

*To the Editor:*—I should like some information on the treatment of phosphaturia. My patient was operated on for the removal of a phosphatic stone in the kidney and now I should like to prevent the continuous phosphatic turbidity of the urine. Please omit name.

M.D.

ANSWER.—Phosphaturia may be of two types: (1) a precipitation of the phosphates due to the presence of an alkaline urine, the phosphates not necessarily being increased in amount but being precipitated by the alkalis present; (2) a precipitation of the phosphates of the earthy types, due to an alkaline urine along with an increase in the output of calcium. The treatment of such conditions should be to eliminate all possibility of the urine becoming alkaline by the administration of such acids as benzoic acid, or, when the calcium is simultaneously increased, to limit the intake of calcium-containing foods and to administer acid sodium phosphate to acidify the urine. Of course, if there is an intercurrent infection that is causing the alkaline reaction of the urine, such drugs as methenamine should be given to control the infection.

## OSTEARTHRITIS OF PHALANGES

*To the Editor:*—I have a patient who has the last joint of the right ring finger swollen and painful. I removed a ganglion from the back of the finger three years ago. It improved, but in the last six months it has been bothering her again. No other joints are involved, except one joint on the index finger, which joint was hurt in an accident when she was a child. I am enclosing a roentgenogram of this finger. Can you tell me what it is?

CARL A. HJELLE, M.D., Portland, N. D.

ANSWER.—A ganglion may recur unless it is removed completely, which is often quite difficult. It is a good thing to have a microscopic section made of all growths. Giant cell tumor is not uncommon on the finger. The roentgenogram shows a hypertrophic osteoarthritis of the distal phalangeal joint, evidently due to the old accident. However, a similar hypertrophic arthritis may occur in one or more joints of the fingers; frequently, in the distal ones, without injury. This condition is probably what is occurring in the other finger. A search for some focus of infection should be made.

## PERNICIOUS ANEMIA

*To the Editor:*—A woman of 65 with pernicious anemia of three years' duration, with increased cord involvement, has responded well to liver treatment as far as her blood is concerned. The red cells have increased from 1,500,000 to 4,500,000; the hemoglobin, from 40 to 75 per cent (Tallqvist). She has also been receiving solution of potassium arsenite and dilute hydrochloric acid. Despite all of these measures, the cord involvement is progressive. She is now unable to walk and exhibits marked incoordination, with numbness subjectively to the umbilicus. There is also considerable tingling in the hands.

G. F. NORMAN, M.D., Eureka, Calif.

ANSWER.—In cases of pernicious anemia, when the reflexes indicate that there is definite disease of the central nervous system, there is little or no probability of improvement of the nervous involvement with any treatment. There is an actual loss of central nervous tissue, which cannot be regenerated. There have, however, been cases of improvement reported. With the improvement of general health and the approach of the blood picture to normal, there may be an apparent improvement and less disability. It is doubtful whether the progress of the central nervous involvement can be arrested or even slowed. Cases of cessation of progress have been reported, but it is the usual experience for the cord changes to progress steadily just as they have in this case, in spite of the fact that the blood has returned to normal. The nervous symptoms due to a peripheral neuritis frequently improve, and this possibly accounts for some of the favorable reports.

There is nothing more that can be done in the case, disappointing as it is.

## PERTHES' DISEASE

*To the Editor:*—A boy, aged 4 years, has what I believe to be Perthes' disease of the hip joint. I am unable to find much in the literature at my disposal regarding this condition. Will you kindly inform me as to the prognosis and treatment of this condition. Please omit name.

M.D., Ohio.

ANSWER.—In Perthes' disease, or Legg-Calvé-Perthes disease, the prognosis is good so far as function is concerned but not so good so far as recovery and restoration of the conformation of the head of the femur.

The treatment of this condition is under discussion. Some believe the cases should be treated as though they were mild cases of tuberculosis, and others feel that unless there is severe pain and considerable muscle spasm the patients do not need to be taken off their feet. A safe outline of treatment is as follows:

1. Absolute recumbency in bed should be observed, with weight and pulley traction until full abduction is obtained. After a period of from seven to ten days a plaster-of-Paris spica cast is applied and weight bearing is allowed. Crutches are used, with a block of 1½ inches under the heel and sole of the shoe of the unaffected side. 2. After a period of from four to six weeks the cast should be made removable by the application of straps and buckles. A model or measurements for a brace should be made. This should be made of the lightest material possible, either celluloid or aluminum.

3. After another period of about three months the brace may be discarded, but the crutches and the raised shoe should be continued for another three months.

Calot treats these cases as though they were due to a congenital subluxation. Perthes treats them for a long period—one or two years. Legg believes that it makes little difference whether the patients are kept off their feet or not; they will have just about the same amount of deformity.

# Medical Education, Registration and Hospital Service

## COMING EXAMINATIONS

ALABAMA: Montgomery, July 8, 1930. Sec., Dr. Stuart Graves, 519 Dexter Ave., Montgomery, Ala.

ARIZONA: Phoenix, July 1-2, 1930. Sec., Dr. H. P. Mills, 14 N. Central Ave., Phoenix, Ariz.

CALIFORNIA: San Francisco, July 7-10, 1930. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

COLORADO: Denver, July 1, 1930. Sec., Dr. Wm. W. Williams, 224 State Capitol Bldg., Denver.

CONNECTICUT: New Haven, June 7, 1930. Basic Science. Chairman, Prof. C. M. Bakewell, Box 1895, Yale Station, New Haven, Conn. Regular, Hartford, July 8-9, 1930. Sec., Dr. T. P. Murdoch, 79 Elm St., Hartford, Conn. Homeo., New Haven, July 8, 1930. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven, Conn.

DELAWARE: Wilmington, June 10-12, 1930. Sec., Dr. H. L. Springer, 1013 Washington St., Wilmington, Del.

DISTRICT OF COLUMBIA: Washington, July 14, 1930. Sec., Dr. W. C. Fowler, District Bldg., Washington, D. C.

FLORIDA: Lakeland, June 16-17, 1930. Sec., Dr. Wm. M. Rowlett, P. O. Box 603, Tampa, Fla.

GEORGIA: Augusta, June 4-6, 1930, and Atlanta, June 11-13, 1930. Sec., Dr. B. T. Wise, Americus, Ga.

IOWA: Iowa City, June 3-5, 1930. Dir., H. W. Grefe, Des Moines, Iowa.

KANSAS: Kansas City, Kan., June 17, 1930. Sec., Dr. Albert S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, June 10, 1930. Sec., Dr. A. T. McCormack, 532 West Main St., Louisville, Ky.

LOUISIANA: New Orleans, June 12-14, 1930. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Waterville, July 1-2, 1930. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland, Me.

MARYLAND: Baltimore, June 17-20, 1930. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore, Md. Homeopathic. June 17-18, 1930. Sec., Dr. J. S. Garrison, 517 Old Orchard Road, Baltimore, Md.

MASSACHUSETTS: Boston, July 8-10, 1930. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MICHIGAN: Ann Arbor, June 10-12, 1930, and Detroit, June 16-18, 1930. Sec., Dr. F. C. Warnshuis, 1010 Maccabee Bldg., Detroit.

MINNESOTA: Minneapolis, June 17-19, 1930. Sec., Dr. E. T. Sanderson, 524 Lowry Bldg., St. Paul. Basic Science, June 3-4, 1930. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., University of Minnesota, Minneapolis.

MISSISSIPPI: Jackson, June 26-27, 1930. Sec., Dr. F. J. Underwood, Jackson, Miss.

MISSOURI: St. Louis, June 11-13, 1930. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City, Mo.

NEBRASKA: Omaha, June 10-12, 1930. Sec., Mr. Ernest M. Pollard, Lincoln, Neb.

NEW JERSEY: Trenton, June 16-17, 1930. Sec., Dr. Charles B. Kelley, 1101 Trenton Trust Bldg., Trenton, N. J.

NEW YORK: Albany, Buffalo, New York, Syracuse, June 23-26, 1930. Chief, Herbert J. Hamilton, Education Bldg., Albany, N. Y.

NORTH CAROLINA: Raleigh, June 16, 1930. Sec., Dr. John W. MacConnell, Davidson, N. C.

OHIO: Columbus, June 9-12, 1930. Sec., Dr. H. M. Platter, Ohio State Savings Bldg., Columbus, Ohio.

OKLAHOMA: Oklahoma City, June 10-11, 1930. Sec., Dr. J. M. Byrum, Shawnee, Okla.

OPHTHALMIC BOARD: Detroit, Mich., June 23, 1930. Sec., Dr. William H. Wilder, 122 So. Michigan Ave., Chicago, Ill.

OREGON: Portland, July 1-3, 1930. Sec., Dr. C. J. McCusker, Medical Dental Bldg., Portland, Ore.

OTOLARYNGOLOGY BOARD: Detroit, Mich., June 23, 1930. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-12, 1930. Supt., Mr. C. D. Koch, Harrisburg, Pa.

RHODE ISLAND: Providence, July 2-3, 1930. Dir., Mr. Lester A. Round, 319 State Office Bldg., Providence, R. I.

SOUTH CAROLINA: Columbia, June 24, 1930. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia, S. C.

SOUTH DAKOTA: Deadwood, July 15, 1930. Dir., Dr. H. R. Kenaston, Bonesteel, S. D.

TENNESSEE: Memphis, Nashville and Knoxville, June 13-14, 1930. Sec., Dr. A. B. De Loach, Medical Arts Bldg., Memphis, Tenn.

TEXAS: Austin, June 17-19, 1930. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas, Texas.

UTAH: Salt Lake City, June 26-27, 1930. Dir., Mr. S. W. Golding, 412 State Capitol Bldg., Salt Lake City, Utah.

VERMONT: Burlington, June 18-20, 1930. Sec., Dr. W. Scott Nay, Underhill, Vt.

VIRGINIA: Richmond, June 17-20, 1930. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke, Va.

WASHINGTON: Seattle, July 10-11, 1930. Basic Science. Dir., Mr. Charles Maybury, Olympia, Wash. Regular, Seattle, July 14-15, 1930.

WISCONSIN: Milwaukee, June 24-26, 1930. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse, Wis. Basic Science. Milwaukee, June 23, 1930. Sec., Prof. R. M. Bauer, Marquette University, Milwaukee, Wis.

WYOMING: Cheyenne, June 2, 1930. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne, Wyo.

## Hawaii January Examination

Dr. James A. Morgan, secretary of the Board of Medical Examiners of Hawaii, reports the written examination held at Honolulu, Jan. 13-16, 1930. The examination covered ten subjects and included fifty-five questions. An average of 75 per cent was required to pass. Four candidates were examined, two of whom passed and two failed. The following colleges were represented:

| PASSED | | |
|---|---|---|
| College | Year Grad. | Per Cent |
| Stanford University School of Medicine | (1928) | 81.3 |
| University of Minnesota Medical School | (1929) | 81.9 |

| FAILED | | |
|---|---|---|
| College | Year Grad. | Per Cent |
| University of Pittsburgh School of Medicine | (1910) | 70.3 |
| University of St. Thomas Faculty of Medicine | (1928) | 73.6 |

## Colorado January Examination

Dr. William W. Williams, secretary of the Board of Medical Examiners of Colorado, reports the written examination held at Denver, Jan. 7, 1930. The examination covered eight subjects and included eighty questions. An average of 75 per cent was required to pass. Five candidates were examined and passed. Seven physicians were licensed through reciprocity with other states. The following colleges were represented:

| PASSED | | |
|---|---|---|
| College | Year Grad. | Per Cent |
| University of Colorado School of Medicine | (1929) | 91 |
| Kansas City College of Medicine and Surgery | (1927) | 83.5 |
| Kansas City University of Physicians and Surgeons | (1929) | 90.1 |
| University of Nebraska College of Medicine | (1929) | 87.6 |
| Marquette University School of Medicine | (1929) | 85 |

| LICENSED BY RECIPROCITY | | |
|---|---|---|
| College | Year Grad. | Reciprocity with |
| College of Medical Evangelists | (1927) | California |
| Georgetown University School of Medicine | (1903) | Hawaii |
| Rush Medical College | (1923) | Illinois |
| University of Illinois School of Medicine | (1925) | Illinois |
| University of Kansas School of Medicine | (1928) | Kansas |
| University of Oklahoma School of Medicine | (1926) | Oklahoma |
| Vanderbilt University School of Medicine | (1907) | Texas |

## SCHOOLS OFFERING SUMMER COURSES IN 1930

### Prepared by the Council on Medical Education and Hospitals

#### ARKANSAS

UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, Little Rock.—Plans to offer a postgraduate course in dog surgery, internal medicine and cancer. For dates and specific information write Dr. Frank Vinsonhaler, dean.

#### CALIFORNIA

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Street, San Francisco.—No routine teaching of undergraduate work, but offers special opportunities for study and research to both graduates and medical students to consist of: (1) a two weeks' course of lectures primarily intended for graduates, and (2) work in the clinics, wards and laboratories, for both graduates and students. The special two weeks' course will be given probably from June 16 to June 28. Four sessions will be held daily, covering the subjects of general medicine, general surgery, obstetrics and gynecology, pediatrics, preventive medicine, pathology and pharmacology. Work offered to graduates and undergraduates as "special workers" in the various departments includes pharmacology, pathology, general medicine, diabetes, electrocardiography and basal metabolism, chest diseases, pediatrics, neuropsychiatry, skin and syphilis, metabolism laboratory, radiology, physical therapy technic, general surgery, ophthalmology, otolaryngology, surgical laboratory, obstetrics and gynecology, and female urology. Minimum attendance is four weeks. Make application to Dr. William Ophüls, dean, before June 2.

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, Parnassus and Third avenues, San Francisco.—Courses for qualified graduates in medicine will be given from June 2 to June 21. The first week will be devoted to a review of recent advances in fundamental sciences and in clinical medicine and surgery. During the second and third weeks, most of the clinical branches will be covered in the morning, and afternoon courses will include general medicine, circulatory diseases, applied anatomy and physiology of the nervous system, pediatrics, infant feeding and hygiene of infancy, general surgery, fractures, otorhinolaryngology, urology, tumors, x-rays, surgical anatomy, pathology and laboratory diagnosis. There will also be daily noon lectures and clinicopathologic conferences open to the medical public. Address Dr. Langley Porter, dean.

#### COLORADO

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue, Denver.—Term extends from June 23 to August 30, offering the following courses to medical students and graduates in medicine: gross anatomy, microscopic anatomy, neuro-anatomy, research in anatomy, research problems in bacteriology and public health, chemistry of blood, biochemical preparations, research in biochemistry, basal metabolism, clinical laboratory methods, technic of the Wassermann test, clinical pathology

for medical students, general and special pathology, autopsies, research in pathology, advanced physiology of the glands of internal secretion, special problems in pharmacology, and special problems in physiology. During July an intensive course in clinical psychiatry, the psychopathology of childhood, and mental hygiene will be conducted by the staff of the Psychopathic Hospital and the heads of other departments. This course is open to graduates in medicine and will consist of lectures and of clinical, ward and outpatient work. Dr. Maurice H. Rees, dean.

### DISTRICT OF COLUMBIA

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Corner of Fifth and W streets, N.W., Washington.—The Department of Surgery offers a three months' course in general surgery designed to meet the needs of physicians and surgeons who desire to improve their diagnostic and operative technic and general surgery. The Department of Medicine offers a course of the same length in general medicine emphasizing the more recent advances in the medical field. Special emphasis is placed on tuberculosis, syphilis, diabetes, and diseases of the heart, blood and kidneys. The application of roentgenology, electrocardiography, basal metabolism and laboratory diagnosis as an aid in the study of disease is amply provided for. Since the clinical material differs with the seasons of the year, it is not possible to state a definite program, but the student is given an opportunity to observe such operations as members of the staff perform during this period. All postgraduates are required to attend the weekly clinical-pathologic conferences on correlation of the clinical study of cases with the pathologic observations. For information regarding dates and fees, address Dr. Numa P. G. Adams, dean.

### ILLINOIS

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street, Chicago.—Summer quarter begins June 16 and ends August 30, offering to acceptable students from class A medical schools courses 1 and 2 in anatomy, the anatomy of the extremities. It is probable that anatomy 8, topographic anatomy, will be added. Dr. Louis D. Moorhead, dean.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue, Chicago.—Will offer a full quarter of both junior and senior courses. Dr. Irving S. Cutter, dean.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 508 South Honore Street, Chicago.—Graduate courses are offered in anatomy, dermatology, laryngology, rhinology, otology, medicine, pediatrics, biophysics, obstetrics and gynecology, ophthalmology, pathology and bacteriology, pharmacology, physiology and physiologic chemistry, and surgery. Research work in all departments will be emphasized. Quarter will begin about June 10. For definite information address Dr. William Henry Welker, secretary of Committee on Graduate Work in Medicine and Dentistry.

RUSH MEDICAL COLLEGE (under the auspices of the University of Chicago), 1758 West Harrison Street, Chicago.—The courses in the third and fourth years of the medical schools are continued at Rush Medical College during the summer quarter in the departments of pathology, medicine, pediatrics, surgery, obstetrics and gynecology, laryngology and otology, ophthalmology and dermatology. There will be opportunity for a limited number of qualified special students to take work in these departments. Postgraduate courses in otolaryngology, ophthalmology, dermatology and radiology for a limited number of qualified students who are able to spend one or more years in study are continued during the summer quarter. In radiology, courses for shorter periods may be arranged. For further particulars consult Dr. Ernest E. Irons, dean, or James H. Harper, registrar.

UNIVERSITY OF CHICAGO SCHOOL OF MEDICINE (Graduate School of Medicine of the Ogden Graduate School of Science), Fifty-Eighth Street and Ellis Avenue, Chicago.—In the summer quarter of 1930, courses in all departments of medicine are offered on the quadrangles in close connection with the other departments of the Ogden Graduate School of Science. Students having necessary prerequisites may register for any of the courses offered, but students regularly admitted to the graduate medical schools have prior consideration in registration for courses required in these schools. Courses offered include zoology, anatomy, physiology, physiologic chemistry and pharmacology, pathology, hygiene and bacteriology, and medicine. Address Dr. B. C. H. Harvey, dean of medical students, the Graduate School of Medicine of the Ogden Graduate School of Science.

### INDIANA

INDIANA UNIVERSITY SCHOOL OF MEDICINE, Indianapolis.—During the six weeks following June 12 short courses will be offered to the physicians of Indiana involving both clinical and laboratory work. Courses at Bloomington for undergraduates include nine courses in anatomy, in which osteology, neural anatomy, and histology are offered as well as dissection. Two courses in physiology will be given, and research work in chemistry may be arranged. For information address the registrar.

### IOWA

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City.—The summer session is divided into two terms, beginning June 10 and July 22, respectively. During the first six weeks term, courses especially designed for practitioners are offered. In addition, courses are offered for undergraduate work in anatomy, bacteriology, physiology, hygiene and public health, and biochemistry. Address either the secretary of the summer school session or Dr. Henry Spencer Houghton, dean.

### KANSAS

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence, Kan.—The School of Medicine is offering courses at Lawrence only. During the first term of six weeks, courses in anatomy of the extremities, head and neck, embryology, histology, biologic chemistry and advanced biochemistry, and physiology will be given. The second term of four weeks offers splanchnology and neurology. Dr. Harry R. Wahl is dean.

### LOUISIANA

TULANE UNIVERSITY OF LOUISIANA, 1551 Canal Street, New Orleans.—All courses begin June 16 and continue until July 25 except in the department of medicine, these being for nine weeks. Undergraduate work will be given to qualified students in anatomy, which includes dissection, embryology, histology, organology and neuro-anatomy, and pathology and medicine. Apply to Dr. C. C. Bass, dean.

### MARYLAND

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Lombard and Greene streets, Baltimore.—Offers a three weeks' general intensive course for physicians during the month of June. Registration is limited and preference will be given to physicians registered in Maryland. The course consists of lectures dealing with modern advances in diagnosis and treatment, stressing the field of general medicine; but surgery and the various specialties will also be included. The schedule covers ward rounds, daily clinics conducted by different departments, assignment at dispensary clinics for pediatrics, genito-urinary diseases, syphilis and gastro-intestinal diseases, as well as laboratory methods of diagnosis, therapeutic procedures, roentgen diagnosis and electrocardiography. For information address Dr. J. M. H. Rowland, dean.

### MASSACHUSETTS

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.—Offers courses in biology and public health from July 7 to August 1, inclusive, as well as a public health institute for health officers and other public health workers. Work includes bacteriology, health education methods, health education subject matter, public health laboratory methods, and methods of teaching general biology. Address Committee on Summer Session.

### MICHIGAN

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor, Mich.—Besides the regular undergraduate courses given during the summer session from June 30 to August 8, there will be special week-end public health institutes of interest to practitioners and others unable to attend during the regular term. Speakers of national reputation have been engaged, and the subjects emphasized will embrace a complete and comprehensive view of the public health field. Attendance at these sessions will furnish sanitarians and teachers with information nowhere duplicated in the time spent. There are six of these week-end sessions with twelve class periods each, beginning June 27 and lasting through August 9, with the exception of the week-end of July 4. Information regarding either the regular credit courses in hygiene and public health or the week-end public health institutes may be obtained from Dr. John Sundwall, director of the division of hygiene and public health, in care of the university.

The undergraduate work will include: (1) all of the laboratory and some of the lecture courses of the first and second year; (2) some of the demonstration courses of the third year; (3) certain of the clinical courses of the senior year; (4) elective courses advantageous to medical students, technicians and others. Courses cover work in anatomy, bacteriology, dermatology and syphilology, internal medicine, neurology, obstetrics and gynecology, ophthalmology, otolaryngology, pathology, pediatrics, pharmacology, materia medica and therapeutics, physiologic chemistry, physiology, roentgenology and surgery. Some of the laboratory work will extend to August 22.

### MINNESOTA

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, Minneapolis.—This school has the four quarter system, and therefore the usual course is offered during the summer to both graduate and undergraduate students. The summer quarter is divided into two terms, the first extending from June 17 to July 26, and the second from July 28 to August 30. Students may attend either or both terms if they have the necessary prerequisites. Dr. E. P. Lyon, dean.

### MISSOURI

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue, St. Louis.—Summer session in medicine begins June 4 and ends July 31. The School of Medicine will give undergraduate instruction in anatomy, including dissection, topographic anatomy and neuro-anatomy; bacteriology, serology and immunology, biochemistry, general biology, and comparative anatomy. Address Dr. Daniel M. Schoemaker, director of the summer session, School of Medicine.

### NEBRASKA

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue, Omaha.—During the week of May 5 to May 12 a postgraduate course will be offered under the auspices of the Department of Internal Medicine and will be confined largely to practical work in the wards and clinics. Interest will center around diseases of the lungs, as tuberculosis, the pneumonias, pneumococcic infections, asthma, bronchiectasis and postoperative pulmonary conditions; diseases of metabolism, majoring in thyroid diseases and diabetes; diseases of the circulatory system and blood-forming organs; arthritides, and diseases of the skin. Address communications to Dr. Charles M. Poynter, dean.

### NEW YORK

UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, Buffalo.—During the summer quarter, June 30 to September 13, two courses will be given, one in systemic anatomy and one in general pathology and pathologic histology. Dr. Edward W. Koch, dean.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, Twenty-Sixth Street and First Avenue, New York.—Is offering a graduate course in pediatrics from June 2 to June 27. Work will be assigned in different wards each day of the week. Lectures, conferences and clinics will be given all members of the course. In the afternoon the graduates will work on ambulant cases under the advice of instructors. Fourth year students who have adequate preparation may be admitted. Course may

be repeated in July if demand is sufficient. Address Dr. Charles Hendee Smith, professor of pediatrics, Bellevue Hospital.

UNIVERSITY OF ROCHESTER MEDICAL SCHOOL, Elmwood and Crittenden Boulevard, Rochester, N. Y.—The department of ophthalmology will give a summer course of postgraduate ophthalmology, August 4 to August 9. For particulars write Dr. George H. Whipple, dean.

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street, New York.—Three short courses in public health giving credit for school health supervisors will be offered during the last two weeks in June. These include lectures and practical work on such subjects as disease control, prevention and relief of behavior disorders, physical education, remedial and corrective exercises, and problems of physicians, nurses and teachers. For information and specific dates apply to the DeLamar Institute of Public Health at the address given above before June 1. Two courses in gastroenterology will be given from June 2 to July 21, and repeated during September. The first is a course of lectures designed for graduates in medicine desiring a working knowledge of the principles underlying the modern diagnosis and treatment of gastro-intestinal disorders. The second deals with the common diagnostic procedures and combines clinical and laboratory work. Address Dr. William Darrach, dean. There will also be given a course in the pathology and diagnosis of tumors at the Institute of Cancer Research in connection with the summer session of the university. This begins July 7 and lasts for six weeks. Apply to the director of the summer session.

OHIO

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Eden and Bethesda avenues, Cincinnati.—Three courses in bacteriology which substitute for the regular medical courses. Address Dr. J. H. J. Upham, dean.

OKLAHOMA

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, Third and Stiles streets, Oklahoma City.—During the session that extends from June 4 to August 1, fifteen courses will be offered in anatomy, one in general bacteriology, three in biochemistry, one in general pharmacology, three in histology and embryology, one in history of medicine, four in pathology with opportunities for special advanced courses, and one in general physiology. Dr. LeRoy Long is dean.

SOUTH CAROLINA

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street, Charleston.—A brief summer course for physicians will be offered, July 7 to July 12, limited to medicine, pediatrics and obstetrics. Special attention will be given to diagnosis and treatment, and a pathologic conference will be conducted each day. Address Dr. Robert Wilson, dean, for more specific information.

TENNESSEE

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, 879 Madison Avenue, Memphis.—The following courses are offered to applicants who have previously taken similar courses in a class A medical school: physiologic and organic chemistry, quantitative and qualitative analysis, physiology of muscle, nerve, blood, circulation and respiration, gross and microscopic anatomy of the nervous system, embryology, organology and anatomy of the head, neck, abdomen and pelvis. For information regarding dates and fees, address Dr. O. W. Hyman, administrative officer.

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Twenty-First and Edgehill, Nashville.—Two series of courses for graduates, one a review course of clinics and lectures during the week of June 12-18, the other an offering of nine courses during the period June 19-July 2. The first course will be of special interest to the general practitioner, while the second has been planned to aid both physician and specialist. The latter offers work in general medicine, pediatrics, tuberculosis, diabetes, general surgical diagnosis and treatment, x-ray diagnosis, syphilis, urology, gynecology and obstetrics. Dr. Waller S. Leathers, dean.

TEXAS

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B, Galveston.—The regular two weeks' postgraduate course for general practitioners of Texas will be given, June 2 to June 14. This includes ward rounds, special clinics in eye, ear, nose and throat, diseases of children, and neuropsychiatry, lectures at the medical college and special laboratory courses in clinical pathology. Also by arrangement short courses may be given in special subjects. Apply to Dr. George E. Bethel, dean.

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue, Dallas.—From June 9 to August 1, courses in histology, embryology, biochemistry, bacteriology, clinical pathology and neuro-anatomy will be offered. These are equivalent to the courses of the regular session. In addition, there will be general review courses in gross anatomy and pathology. Apply to Dr. W. H. Moursund, dean.

VIRGINIA

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE, University, Va.—Session extends from June 16 to July 26, offering courses in histology, embryology, anatomy, topographic anatomy, anatomy of the nervous system, and biochemistry. Work is offered primarily for students who are deficient in these subjects and desire to review. Dr. James C. Flippin, dean.

WEST VIRGINIA

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE, Morgantown.—Offers a course in biochemistry the first six weeks of the summer session which duplicates that given during the year. For further information, address Dr. John N. Simpson, dean.

WISCONSIN

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, 412 North Charter Street, Madison.—During the session of June 30 to August 8, medical students presenting letters of recommendation from the deans of their various schools may be admitted for work in the following courses: histology and organology, embryology, four courses in anatomy, two courses in bacteriology, medicine (open to Wisconsin students only), two courses in pharmacology, physiologic chemistry, advanced physiology and research, and surgery for fourth year Wisconsin students only. Address communications to Dr. Charles R. Bardeen, dean.

# *Medical Economics*

## COMPARATIVE EXPENDITURES FOR MEDICAL CARE

W. C. RAPPLEYE, M.D.
NEW HAVEN, CONN.

The financial aspects of medical care are receiving so much emphasis of late that there is a distinct tendency to lose sight of the relationship of this question to other national expenditures.

The annual cost of nongovernmental medical services is approximately as given in table 1 and represents about 2.4 per cent of our national income.

TABLE 1.—*Annual Cost of Nongovernmental Medical Services*

| | In Millions of Dollars | Per Family per Year |
|---|---|---|
| "Patent medicines" and drugs | 700 | $25 |
| Physicians | 650 | 24 |
| Hospitals (nongovernmental) | 380 | 15 |
| Nurses, trained and practical | 200 | 8 |
| Dentists | 150 | 6 |
| Irregulars | 50 | 2 |
| | 2,130 | $80 |

Governmental expenditures provided out of taxation for medical and institutional care bring the grand total to about three billion dollars (3 per cent of the national income).

Studies of the expenditures for medical care in different economic groups have given figures of approximately $60 for the families of wage earners, $62 for those of farmers and $80 for those of office employees.

For the sake of comparison, the figures of expenditures presented in table 2 are of interest. The total represents about 13 per cent of the national income.

TABLE 2.—*National Nonmedical Expenditures*

| | In Millions of Dollars | Per Family per Year |
|---|---|---|
| Passenger automobiles | 4,000 | $150 |
| Tobacco products | 1,800 | 67 |
| Candy | 1,000 | 37 |
| Gasoline (noncommercial) | 1,000 | 37 |
| Theaters, movies, entertainment | 930 | 35 |
| Soft drinks, ice cream and gum | 910 | 34 |
| Jewelry and fur articles | 780 | 29 |
| Radios and musical instruments | 440 | 16 |
| Sporting goods, toys, games | 430 | 16 |
| Perfumes, cosmetics, toilet soap | 410 | 15 |
| | 11,700 | $436 |

These figures permit a number of interesting comparisons. The public buys what it is taught to buy, and a billion and a half dollars is spent yearly in that education through advertising. Three billions is spent each year in maintaining prisons, police courts, district attorneys and sheriffs and represents the direct cost of crime and its prevention. The value of goods stolen every year amounts to approximately the same figure. During the last ten years, the people of the country have scrapped automobiles for which they paid more than twelve billion dollars.

These figures are presented only to indicate the relative expenditures for medical services and not to minimize the facts that illness and disability are very unevenly distributed through the population and that the largest problem before the medical profession is to secure an adequate distribution of modern medical services to the entire population at a reasonable cost.

215 Whitney Avenue.

# Book Notices

THE IMMUNOLOGY OF PARASITIC INFECTIONS. By William H. Taliaferro, Ph.D., Professor of Parasitology, the University of Chicago. Cloth. Price, $6. Pp. 414, with 28 illustrations. New York: Century Company, 1929.

This book brings together in an interesting manner the present available knowledge on parasitology. It is of particular importance to note the large number of references on the various subjects. The book has nine chapters and covers a variety of subjects in such a manner that it could well be used as a textbook for students. While a great deal of the immunologic work that has been done on the parasitic infections to date must at this stage remain a laboratory curiosity, the book offers a definite stimulus to research work and further investigation along a line too long neglected. This is particularly true of those parasitic infections now endemic in the United States. The diagnosis of amebiasis will be subject to variations in interpretation as long as morphologic differences must be relied on as a criterion for distinguishing intestinal protozoa. A complement fixation test in amebiasis is here fully discussed, though it is considered by many to be not enough simplified to be of practical routine value in the ordinary clinical laboratory. There is no doubt that it offers a new hope for uniform diagnosis. As far as the United States is concerned, the infection with *Endameba histolytica* presents a problem greater than that of any other endemic parasitic infection. Therefore, if the compilation of the serologic work of these organisms alone will result in better methods of diagnosis of intestinal protozoa, the book will be of value to the clinician and research worker. The same may be said of malaria and the helminth infections, such as hydatid disease and trichinosis, which offer difficulty in diagnosis. The section on leishmaniasis, on which the author himself has done much valuable work, is particularly complete. Of general value is the appendix containing information as to the proper name, the common synonyms, and the common host of parasitic infections.

KURZES HANDBUCH DER OPHTHALMOLOGIE. Herausgegeben von F. Schieck und A. Brückner. Band I: Anatomie. Entwicklung. Missbildungen. Vererbung. Bearbeitet von P. Eisler, A. Franceschetti, R. A. Pfeifer und R. Seefelder. Paper. Price, 134 marks. Pp. 882, with 423 illustrations. Berlin: Julius Springer, 1930.

This is the first of seven proposed volumes of a handbook of ophthalmology that is to occupy a midposition between the average textbook and the massive Graefe-Saemisch handbook. The first and fifth volumes have already been published, the second is promised for early in the summer, and the remainder are to appear during the course of the coming year. It is hoped that this promise will be fulfilled, for the big brother (Graefe-Saemisch) has been dragged out interminably. The first volume deals with anatomy, development, malformations and heredity. The first 349 pages are by Eisler of Halle and deal with the gross and microscopic anatomy of the eye, orbit and adnexa. If any details have been omitted from this section, they are ultramicroscopic. One hundred and eleven illustrations are used and they conform in all respects to the standards found throughout. The nervous connection between the eyes and the brain is the subject of the next eighty-five pages, by Pfeiffer of Leipzig. The majority of the seventy-one illustrations of this section represent histologic sections, but included are a few excellent three dimensional pictures of the intracranial course of the optic tracts. Only forty-two pages are given to the development of the eye, by Seefelder of Innsbruck. Although the text and illustrations are good, the amount of space is not proportionate. For example, he should have elaborated somewhat more at length on his reasons for believing in the mesodermal origin of the vitreous. The same author wrote 112 pages on malformations of the eye and covered the subject completely. The last 183 pages of this volume are by Franceschetti of Basel and deal with heredity in ophthalmology. This section is written with rare thoroughness and charm. It starts with a marvelous exposition of the mendelian law and its ophthalmic application; then comes a detailed discussion of all possible phases of heredity in ophthalmic conditions. Nowhere else in ophthalmic literature is there to be found such a complete compilation of the work on this subject. The handbook promises much, and the first volume more than fulfils that promise. If the remaining six volumes maintain the same standard, ophthalmic literature will have much to be thankful for. The bibliographies are fairly complete and cover all important references to date and are in an easily usable form, being arranged according to topics and also according to authors alphabetically. The subject index is not so complete; but, with the form in which the volume is published, that is not so essential. The printing is good, although several typographic errors seem to have avoided the proofreaders and in one place fifteen whole pages are transposed. The illustrations are marvelous, both black and white and colored. They are not unnecessarily profuse but are adequate in number and character. This is a reference work that will be found in every library of a public medical character and should be found in the library of every ophthalmologist who reads or writes.

THE EPIDEMIOLOGY AND CONTROL OF MALARIA IN PALESTINE. By Israel J. Kligler, Director, Department of Hygiene, Hebrew University, Jerusalem. Cloth. Price, $5. Pp. 240, with illustrations. Chicago: University of Chicago Press, 1930.

This monographic treatment of the malaria problem in Palestine contains a large fund of data dealing with the medical, entomologic and public health aspects of the subject, most of which has been previously published. It serves admirably to emphasize that detailed rules for malaria control, applicable throughout the world or even throughout a country, cannot be formulated; that the problem is predominantly local and can therefore be solved only after a detailed study of local conditions. The author and his associates carried out such a detailed study as is evidenced by the subjects discussed: Two chapters deal with topography and climate of the country and the social, economic and health conditions of the people; two with biology of the anophelines; two with incidence, etiology and epidemiology of malaria, and two with methods and results of control measures which, where successful, were largely antilarval methods. One chapter deals with various methods used where antilarval methods were unsatisfactory. In addition there is an appendix describing typical drainage works of a permanent character, a short bibliography and an index. Throughout, the book gives an enviable record of achievement in a difficult field of public health and will be of great value to field workers in malaria control both because of the large amount of detailed data and because it illustrates the correct method of attacking the problem.

DERMATOLOGY AND SYPHILOLOGY FOR NURSES INCLUDING SOCIAL HYGIENE. By John H. Stokes, M.D., Duhring Professor of Dermatology and Syphilology, the School of Medicine, and Professor of the Graduate School of Medicine, University of Pennsylvania. Cloth. Price, $2.50. Pp. 311, with 67 illustrations. Philadelphia: W. B. Saunders Company, 1930.

There has long existed a need for a comprehensive guidebook for the nurse to follow in learning the basic facts of dermatology and syphilology. Stokes has suceeded admirably in presenting this difficult subject in a thoroughly practical and readable form. As the author states in his introduction, the book is addressed to nurses as students in training, as practitioners, and as women of intelligence and civic initiative. Part I summarizes the essentials of dermatology; part II includes the special methods of dermatologic treatment; part III deals with the venereal diseases from the medical point of view, and part IV is devoted to the sanitary and public health background. The final chapter, on the normal ideals of sex life, is an interesting exposition of the author's views on this subject. A valuable feature is contributed by the "thumb-nail sketches" and summaries, which present in tabloid form the therapeutic procedures to be administered under the guidance of the physician. This book belongs in the library of every nurse's training school, and even the practitioner will find many helpful hints in its contents.

GUIDE TO THE STUDY OF ANIMAL PARASITES. By William A. Riley, Ph.D., Sc.D., Department of Zoology, University of Minnesota, and Reed O. Christenson, M.A., Department of Zoology, University of Minnesota. Cloth. Price, $1.50. Pp. 131, with 33 illustrations. New York: McGraw-Hill Book Company, Inc., 1930.

The present laboratory guide is written to be of assistance to the student in general parasitology who may have varied interests, to the nonspecialist who wishes to present such a general course, and to the independent student in zoology who is interested in the subject. Accordingly, the chief emphasis is on purely zoological subjects although there are frequent and extended references to human parasites. Each chapter or laboratory period consists of an introduction of technical suggestions which will be of great value to the instructor preparing the material, a general statement of the characteristics of the organisms studied and general directions for practical work, with a short bibliography suitable for further study. The authors have adopted the unique plan of not only giving detailed directions for work but appending suitable figures and even analytic keys to assist the student. Particular mention should be made of the list of parasites found in the common laboratory animals, which should prove invaluable to teachers. The authors have attained their purpose admirably. It is to be regretted that no work on arthropods is included; but the authors feel that this has been already adequately covered in existing outlines.

DIE FUNKTION DER WEIBLICHEN GESCHLECHTSORGANE UND IHRE BEZIEHUNGEN ZUM GESAMTORGANISMUS FÜR ÄRZTE UND STUDIERENDE. Von Dr. Alexander v. Fekete, Oberarzt der Graf-Apponyi-Poliklinik in Budapest. Paper. Price, 12 marks. Pp. 278. Berlin: S. Karger, 1930.

This treatise is published by the author to complement the material found in textbooks and compends rather than to refute or replace it. There are four general divisions of the work. In the first portion von Fekete discusses the function of the sex organs, puberty, menstrual disturbances, normal and abnormal secondary sex characteristics, and the menopause. In the second he describes sex life and its disturbances, including sterility, leukorrhea and pain. The third division is devoted to pregnancy; he particularly dwells on metabolic disturbances, though blood changes and toxicoses are also discussed. The final division is a discussion on endocrine, nervous, circulatory and constitutional changes in relation to the sex organs. The work is put up economically but in clear, readable type and easy, logical diction. The section on the endocrine glands is especially praiseworthy.

PEPTIC ULCER: CLINICAL ROENTGENOLOGY, WITH CASE HISTORIES. By Jacob Buckstein, M.D., Instructor in Gastrointestinal Roentgenology, Cornell University Medical College. Introduction by Harold E. Santee, M.D., Clinical Professor of Surgery, Cornell University Medical College. Volume X of Annals of Roentgenology. A Series of Monographic Atlases. Edited by James T. Case, M.D. Cloth. Price, $12. Pp. 337, with 287 illustrations. New York: Paul B. Hoeber, Inc., 1930.

This volume is one of several edited by Dr. Case. Its intrinsic value rests solely in the presentation of a large number of beautiful reproductions of roentgenograms mostly from the author's own experience, a few from others. An historical review of the development of the recognition of the various lesions encountered in roentgenography of the stomach and duodenum tract is well presented. The importance of careful examination of the patient in various positions and at various angles is stressed. An abstract of most of the cases accompanies the illustrations. This book can be especially recommended as an illustrated guide for beginners.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 38, Band VIII: Pappatacifieber und Dengue. Von Prof. Dr. R. Doerr. Lyssa. Von Prof. Dr. Jos. Koch. Ueber die experimentellen Grundlagen der Schutzimpfung gegen Hundswut. Methoden der Schutzimpfung und ihre Resultate. Von Prof. Dr. R. Kraus und Dr. F. Schweinburg. Poliomyelitis acuta. Von Dr. K. Landsteiner. Third edition. Paper. Price, 27 marks. Pp. 501-820, with 27 illustrations. Jena: Gustav Fischer, 1929.

This number of the Handbuch contains a masterly article by Landsteiner on poliomyelitis. If all writers selected their material as critically and pruned it as relentlessly as he has done, the various reviews and summaries of scientific work would not be swollen to their present monstrous proportions and the harried reader in every land would not be smothered under a multitude of irrelevant facts and verbosity. The other articles in this number are sound and scholarly but of a more familiar type. The printer is apparently giving more attention to the correct reproduction of names of authors and titles of papers in other languages than German. The blunders so frequently observed in the bibliographies of earlier articles are not conspicuous in this issue.

# *Medicolegal*

## "Total and Permanent Disability" Defined

*(Equitable Life Assur. Soc. v. Serio (Miss.), 124 So. 485)*

The insured carried a policy of life insurance under which the insurer, for an additional premium, agreed to pay certain benefits if the insured should become totally and permanently disabled. He developed tuberculosis. On the advice of his physician, he refrained from doing regular manual labor. He spent a part of nearly every day, however, in a small country store, which he and his wife, with the aid of their children, operated. The family lived in the rear of the store. In that connection he could do small jobs, occasionally wait on customers when no considerable effort was required, and generally, when circumstances did not require him to rest in bed, assist in the store in an irregular and more or less casual way. In undertaking these tasks, he was always exposed to the risk of attacks of weakness and of having to go back to bed, but one or more members of the family were there for his aid and protection. There was nothing to show that if he had been separated from his family and from the security that their presence afforded he could have independently earned, in any kind of employment for a financial return, an amount of any consequence. The insured filed claims for two annual instalments of benefits claimed to be due under his policy, but payment was refused. He thereupon sued and recovered judgment. The insurer appealed to the Supreme Court of Mississippi.

The construction, said the court, which is placed by nearly all courts on insurance contracts such as that which forms the basis of this suit is an equitable and reasonable construction. It is not that literal interpretation which would construe "total disability" to mean a condition of complete helplessness or such an entire physical or mental inability in respect to the pursuit of an occupation or employment as would prevent the insured from doing anything whatever. The construction is more liberal in a case in which the disability arises out of a disease the nature of which is such that common care and prudence require the insured to rest, to the extent that he shall refrain from the ordinary exactions of any fixed employment. Tuberculosis is such a disease, as is so well known as to require no proof before the average jury in Mississippi. The jury in this case, in the light of all the evidence, was well justified in returning the verdict that it did, in favor of the insured.

The insurer apparently claimed that even though it should be held that within the meaning of the policy the insured was wholly unable to engage in any occupation or perform any work and was therefore "totally disabled," yet the evidence did not show that his disability was "permanent" and that he could not get well. But the court refused to interpret the term "permanent disability" as meaning only a disability without any hope or possibility of recovery or change for the better. Courts must give such contracts a reasonable interpretation that will stand the test of honesty and square the transaction between the parties with some valuable object in contemplation at the time the contract was made. The word "permanent" was construed by the court, therefore, as having been used for the purpose only of excluding disabilities that are merely temporary. Although a disability is one which may or will pass away in a fair period of time, yet if the required period is longer than that which reasonably considered is only temporary, then it must of necessity fall within the opposite general term, "permanent," because it is not "temporary." The connection in which the word is used, rather than its most restricted literal definition, is required to control in determining its meaning.

If "total disability" should be held to mean utter helplessness, and the term "permanent disability" to mean utter hopelessness, then about the only case covered by the policy would be one in which the insured had lost both arms and both legs, or some other such case so rare that it could not have been for a moment reasonably considered as having been within the contemplation of the insured when taking out the policy. To give the terms of the contract such a strict or literal interpretation would be to convict a reputable insurance company of having put out a policy among the people of the state, and having collected premiums on that policy, which in effect would be scarcely more than a cheat, a pretense, and a fraud.

The judgment of the trial court was affirmed.

### Duodenal Ulcers and Trauma

*(Landry v. Phoenix Utility Co. (La.), 124 So. 623)*

On July 18, 1927, Landry, a carpenter, died as the result of hemorrhages from duodenal ulcers. Until May 12, 1927, he had been in good health, enjoyed a good appetite and suffered no physical discomforts whatever. On that day a piece of timber struck him on the chest, causing a double fracture of the eighth rib and a simple fracture of the ninth. After the accident, he complained of pains in his side, which became more severe, notwithstanding treatment by several physicians. They attributed his suffering to the injury to his chest. It was not until a few days prior to his death that a roentgen examination revealed the duodenal ulcers that caused his death. An autopsy showed multiple ulcers of the duodenum, hemorrhages, and acute and chronic diffuse nephritis. The widow of the deceased employee contended that the fatal duodenal ulcers were either caused by the blow on his chest or aggravated by it so as to precipitate his death. She therefore brought suit against his employer. From a judgment against her, she appealed to the Court of Appeal of Louisiana.

There was considerable expert testimony in the record, and, said the Court of Appeal, "it is, as is not unusual in such cases, conflicting." All of the experts who testified seemed to agree, however, that the cause of gastric or duodenal ulcers is unknown. One of the expert witnesses who testified in support of the widow's claim, supported in a measure by two others, maintained that gastric and duodenal ulcers might be caused by external trauma. It is possible, he said, for blood clots or emboli to form in the blood as a result of the trauma, and to be carried by the blood and find lodgment in any part of the body. Lodging in the brain, they cause paralysis and death, and lodging in the duodenum or stomach they produce ulcers. Expert witnesses testifying in opposition to the widow's claim disputed the correctness of the hypothesis advanced by the witnesses for the other side and denied the possibility of such ulcers resulting from external trauma. The pathologist who performed the autopsy concurred in the opinion of these experts, that the fracture of the ribs of the deceased had nothing to do with his death.

"To the untutored mind of this court," said the Court of Appeal, "it would appear that a severe injury, resulting in the fracture of two ribs, one of them in two places, such as was suffered by the deceased, Landry, would have some causal relation, or would at least have contributed, to his demise, which occurred about two months after the injury, particularly since the testimony is to the effect that he had previously enjoyed good health and was not known to complain of any physical illness prior to the accident." But, said the court, we are not privileged to indulge our impressions in a matter so technical, in view of the expert testimony in the record, which clearly preponderates to the effect that duodenal ulcers, the admitted cause of Landry's death, could not be produced as a result of external trauma. The trial court, who heard the experts testify, denied the widow's claim, because of the preponderance of the expert testimony against her contention. The Court of Appeal sustained the action of the trial court, because of that preponderance, adding, "If we and our brother below have erred, the responsibility must rest with the medical profession and not the judiciary."

**Wills: Testamentary Capacity and Eccentricity, Miserliness, Old Age and Ability to Transact Ordinary Business.**—A person who is capable of transacting ordinary business is capable of making a valid will. The strongest evidence of a testator's soundness of mind and memory is positive testimony that he always transacted his ordinary business intelligently. Eccentricity, miserliness, uncleanness, slovenliness, neglect of person and clothing, and offensive and disgusting personal habits do not constitute unsoundness of mind. Extreme age and feeble health, though combined with a defective memory and mental sluggishness, do not render a testator incapable of making a will, unless his mind has become so impaired that he is incapable of understanding the business in which he is engaged when in the act of making his will. If the testator is able to remember the natural objects of his bounty, to recall to mind his property, and to make disposition of it understandingly, according to some purpose or plan formed in his mind, he is possessed of testamentary capacity.—*Forberg et al. v. Maurer et al. (Ill.), 168 N. E. 308.*

## Society Proceedings

### COMING MEETINGS

American Medical Association, Detroit, June 23-27. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Goiter, Seattle, July 10-12. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.

American Association of Industrial Physicians and Surgeons, Detroit, June 23-24. Dr. V. S. Cheney, Armour and Company, 43d Street and Racine Avenue, Chicago, Secretary.

American Association of Medical Milk Commissions, Detroit, June 23-24. Dr. Harris Moak, 360 Park Place, Brooklyn, New York, Secretary.

American Dermatological Association, Cleveland, June 19-21. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Heart Association, Detroit, June 24. Dr. I. C. Riggin, 370 Seventh Avenue, New York, Executive Secretary.

American Neurological Association, Atlantic City, June 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.

American Ophthalmological Society, Hot Springs, Virginia, June 2-4. Dr. Emory Hill, 501 E. Franklin Street, Richmond, Va., Secretary.

American Pediatric Society, Montreal, June 17-19. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Physiotherapy Association, Detroit, June 23-24. Miss C. H. Ballard, St. Francis Hospital, San Francisco, Secretary.

American Proctologic Society, Buffalo, New York, June 22-24. Dr. Curtice Rosser, Medical Arts Building, Dallas, Texas, Secretary.

American Radium Society, Detroit, June 23-24. Dr. G. W. Grier, 500 Penn Avenue, Pittsburgh, Secretary.

American Society of Clinical Pathologists, Detroit, June 20-23. Dr. H. J. Corper, Metropolitan Building, Denver, Secretary.

American Therapeutic Society, Detroit, June 20-21. Dr. William J. Mallory, 1720 Connecticut Avenue, Washington, D. C., Secretary.

American Urological Association, New York, June 10-12. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Association for Research in Ophthalmology, Detroit, June 24. Dr. Conrad Berens, 30 East 40th Street, New York, Secretary.

Association for the Study of Allergy, Detroit, June 23-24. Dr. Warren T. Vaughan, 118 East Franklin Street, Richmond, Va., Secretary.

Association for the Study of Internal Secretions, Detroit, June 23. Dr. F. M. Pottenger, Monrovia, Calif., Secretary.

Association of American Teachers of the Diseases of Children, Detroit, June 24. Dr. Ralph M. Tyson, 334 South 21st Street, Philadelphia, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., June 2-3. Dr. A. J. Chesley, State Board of Health, St. Paul, Minn., Secretary.

Idaho State Medical Association, Coeur d'Alene, June 27-28. Dr. Joseph N. Davis, Kimberly, Secretary.

Maine Medical Association, Portland, June 2-4. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Plymouth, June 17-18. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, Montreal, June 24. Miss Sue Biethan, General Library, University of Michigan, Ann Arbor, Secretary.

Medical Women's National Association, Detroit, June 22-24. Dr. Elizabeth Kittredge, 3906 McKinley Street, Washington, D. C., Secretary.

Minnesota State Medical Association, Duluth, July 14-16. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Montana, Medical Association of, Butte, June 30. Dr. E. G. Balsam, Box 88, Billings, Secretary.

New Jersey, Medical Society of, Atlantic City, June 11-14. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New Mexico Medical Society, Raton, June 4-6. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Rochester, June 2-5. Dr. Daniel S. Dougherty, 2 E. 103d Street, New York, Secretary.

Pacific Northwest Medical Association, Butte, Montana, July 1-3. Dr. Frederick Epplen, 639 Stimson Building, Seattle, Secretary.

Rhode Island Medical Society, Providence, June 5. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

Wyoming State Medical Society, Sheridan, July 15-16. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

# Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

### American J. Diseases of Children, Chicago

**39:** 685-916 (April) 1930

Anatoxin as Immunizing Agent Against Diphtheria. G. Ramon and G. I. Hélie, Paris, France.—p. 685.
Comparative Studies of Influence of Acid-Forming and Base-Forming Diets on Metabolism of Rats. E. L. Samuel and I. N. Kugelmass, New York.—p. 687.
*Growth and Nitrogen Metabolism of Infants Receiving Undiluted Milk. M. V. K. Nelson, Iowa City.—p. 701.
*Urobilinuria: Prognostic Value in Children with Heart Disease. M. H. Edelman, L. Halpern and J. A. Killian, New York.—p. 711.
Influence of Feeding on Certain Acids in Feces of Infants: IV. Effect of Excess of Lactose in Breast Milk and Whole Cow's Milk on Excretion of Volatile Acids and of Lactic Acid. J. R. Gerstley, C. C. Wang and A. A. Wood, Chicago.—p. 729.
Respiratory Metabolism in Infancy and Childhood: XI. Respiratory Exchange in Marasmus: Effect of Muscular Activity. J. R. Wilson, Syracuse, N. Y., and S. Z. Levine and M. Kelly, New York.—p. 736.
Otitis Media and Mastoiditis in Infants Under Three Months of Age. F. M. Holsclaw, C. A. Boehm and J. M. Bierman, San Francisco.—p. 747.
*Malnutrition: Preventorium Treatment and End-Results. J. R. Wiseman, Syracuse, N. Y.—p. 758.
*Minimum Requirement of Calcium and Phosphorus in Children. C. C. Wang, R. Kern and M. Kaucher, Chicago.—p. 768.
*Asthma in Children: IX. Rôle of Environment in Treatment of Selected Group of Cases: Plea for Home as Restorative Measure. M. M. Peshkin, New York.—p. 774.
*Thymic Shadows of New-Born Infants. H. B. Podlasky and S. E. Kohn, Milwaukee.—p. 782.
Cavernous Malformation About Portal Vein Manifested Clinically as Chronic Thrombosis of Splenic Vein. S. V. Creveld and W. A. Levy, Amsterdam, Holland.—p. 790.
*Primary Anemia in New-Born. C. F. Gelston and E. E. Sappington, San Francisco.—p. 807.
Why Parents Consult Pediatrician. G. S. Stevenson, New York.—p. 814.
William Cadogan 1711-1797. J. Ruhrah, Baltimore.—p. 827.

**Growth and Nitrogen Metabolism of Infants Receiving Undiluted Milk.**—Additional evidence is presented by Nelson that growth is definitely influenced by the food intake. His results are interpreted to indicate that feedings of undiluted milk not only are well tolerated but produce an increased rate of growth both in weight and in length. This increase is accompanied by a proportionate increase in the retention of nitrogen and therefore does not represent merely the accumulation of adipose tissue.

**Urobilinuria: Prognostic Value in Children with Heart Disease.**—Five thousand determinations of the urobilinuria were made by Edelman et al. in 700 children, including normal, noncardiac, ambulatory cardiac and decompensated cardiac children. Urobilinuria was noted in 88 per cent of those with congestive cardiac failure, in 27 per cent of the ambulatory children with cardiac disease, and in 4 per cent of the control cases. Hyperurobilinuria followed tonsillectomies and myringotomies in 86 per cent of the children with congestive failure, and in 2 per cent of the control children of the group. Hyperurobilinuria after these surgical procedures was not observed in the children of the ambulatory group. The quantity of urobilin in the urine of children with cardiac disease varied throughout the day. For the children whose activities were unrestricted in the babies' wards, the maximum amount that was excreted was noted in the afternoon hours between 12 and 6 p. m. The estimate of the prognostic value of urobilinuria in children with congestive cardiac failure was based on a comparison of the quantity of urobilin excreted during periods of twenty-four hours each with the clinical signs of cardiac failure throughout the period of hospitalization of twenty children. The data obtained in seven cases are presented graphically in this paper. These observations suggest that urobilinuria is a valuable laboratory aid for the prognosis of the child with a congestive cardiac failure. The urobilinuria should be considered an important factor in determining the necessity of restricting the child's activities or the advisability of surgical procedures such as transfusions and tonsillectomies.

**Malnutrition: Preventorium Treatment and End-Results.**—Wiseman says that reports from various sources indicate that the conventional open-air classroom, where the children wear special clothing and are exposed to outdoor atmosphere, is tending to disappear. Its place is being taken by more simple rest and nutrition classes, or by general improvement of the hygiene of the school day, particularly with regard to rest, feeding and open-window ventilation. Mild forms of malnutrition can be satisfactorily treated by a proper regimen in the public schools. Preventorium care with its greater cost should be reserved for the more severe cases. Intensive follow-up work is necessary for permanent results, whatever type of treatment is chosen.

**Minimum Requirement of Calcium and Phosphorus in Children.**—Wang et al. assert that the minimum and not the optimum calcium and phosphorus requirements of an 8 year old child weighing 20 Kg. and living on a mixed diet would be 0.64 Gm. of calcium oxide and 1.58 Gm. of phosphorus pentoxide a day.

**Asthma in Children.**—In a series of 425 cases of asthma analyzed by Peshkin, it was found that in forty-one children, ranging in age from 2 to 14 years, or approximately 10 per cent, the asthma remained severe, persistent and of long duration, in spite of intensive modern treatment. Twenty-five children (twenty-two sensitive and three nonsensitive to protein) were treated by a change of environment. In spite of the fact that the inhalant and the dietetic restrictions were kept less rigid than at home, twenty-three children, or 92 per cent, were markedly improved or entirely relieved of asthma. Sixteen of these forty-one children were not treated by a change of environment because of lack of facilities and other reasons and so indirectly served as a control series. These children are still suffering from chronic asthma. The author feels that until newer methods of treatment are advanced that will successfully control or free this group of children from asthma, the establishment of a "home" where a child with chronic refractory asthma can be kept for at least six months is regarded as a humane, urgent and economic necessity as well as a therapeutic measure of definite value.

**Thymic Shadows of New-Born Infants.**—Roentgenograms were taken by Podlasky and Kohn of the chests of 100 consecutive new-born infants during the first twenty-four hours of life. Thirty-five showed definitely enlarged thymic shadows. None of the symptoms usually referable to thymic enlargement were evident in the cases.

**Primary Anemia in New-Born.**—A case of congenital anemia is reported by Gelston and Sappington, being the eighth to appear in the literature. The patient, a boy, born after full term and in normal delivery, showed a marked primary anemia during the first week of life. Treatment consisted of three intravenous transfusions of whole blood of approximately 100 cc. each. Liver extract was given daily. When the baby was about 4 months of age, the results of physical examination were entirely normal.

### American J. Physical Anthropology, Philadelphia

**14:** 1-132 (Jan.-March) 1930

Growth Studies by Roentgen Ray. E. F. Ritt and R. O. Sawtell, New York.—p. 1.
Dermatoglyphics in Negroes of West Africa. H. Cummins, New Orleans.—p. 9.
Normal Proportions of European Calvaria. M. A. MacConaill, London.—p. 23.
Subnason: New Cranial Point; Significance in Modern and Fossil Man, Anthropoids and Lower Mammals. J. Cameron, Halifax, Nova Scotia.—p. 33.
Pterion. H. B. Collins, Jr.—p. 41.
Calf Muscles in American Whites and Negroes. G. D. Williams, G. E. Grim, J. J. Wimp and T. F. Whayne, St. Louis.—p. 45.

Color-Top Method of Estimating Skin Pigmentation. H. A. Bowman, Cleveland.—p. 59.
Preparation of Hair for Cross-Section Examination. G. F. Fiala, Cleveland.—p. 73.
Measuring Hair Color. R. Bellamy, Tallahassee, Fla.—p. 75.
Steatopygy and Acromegaly. G. S. Miller, Jr.—p. 79.

## Annals of Internal Medicine, Ann Arbor, Mich.

**3:** 969-1076 (April) 1930

*Influence of Venous Filling on Heart. M. H. Kahn, New York.—p. 969.
*New Instrument Utilizing Controlled Air Pressure for Dilating Spastic Lesions of Esophagus (Especially of Cardia). F. Smithies, Chicago.—p. 991.
Gastric Manifestations in Constitutional Inadequacy: Ten Cases. A. C. Clasen, Kansas City, Mo.—p. 995.
Agranulocytosis: Four Cases. W. H. Gordon, Detroit.—p. 1008.
Massive Collapse (Atelectasis) of Lung: Case. L. J. Moorman, Oklahoma City.—p. 1024.
*Seasonal Hay-Fever Not Due to Pollen. S. M. Feinberg, Chicago.—p. 1035.
Cavitation and Repair of Pulmonary Tuberculosis. A. N. Sinclair, Honolulu, Hawaii.—p. 1038.
Medical Men Who Have Attained Fame in Other Fields of Endeavor: I. Medical Men as Musicians. E. Weinfield, New Orleans.—p. 1046.

**Influence of Venous Filling on Heart.**—Kahn reports in detail the results of his experiments made to ascertain and determine the influence of venous filling on (1) the heart rate; (2) the carotid pressure; (3) the heart volume as determined especially by the plethysmograph; (4) the intraventricular pressure curve in the left ventricle, and (5) the influence of dilatation of the right heart on the electrocardiogram.

**New Instrument Utilizing Controlled Air Pressure for Dilating Spastic Lesions of Esophagus.**—Smithies describes a dilator useful particularly in the radical local management of cardiospasm associated with diffuse dilatation of the esophagus.

**Seasonal Hay-Fever Not Due to Pollen.**—Two cases of seasonal hay-fever are reported by Feinberg in which tests and subsequent therapeutic results showed them to be caused by orris root and not by pollen. The seasonal nature of these cases is to be explained by the fact that the limit of tolerance to the orris root has been exceeded only during the summer months when the use of powder is excessive. These cases emphasize the fact that in the management of hay-fever patients thorough testing with pollens is imperative, as well as a consideration of other factors that may be responsible for the symptoms.

## Archives of Ophthalmology, Chicago

**3:** 393-504 (April) 1930

Classification of Retinitis. E. Fuchs, Vienna, Austria.—p. 393.
Endocrine Studies: XXIV. Etiology of Glaucoma. A. W. Rowe, Boston.—p. 403.
Metastatic Bacillus Coli Panophthalmitis from Calculus Pyonephrosis. J. Levine, New York.—p. 410.
Eye Contour Visual Factor. V. B. Fischer, Boulder, Colo.—p. 413.
Consequences of Softening of Eyeball. E. Fuchs, Vienna, Austria.—p. 419.
Corneal Spuds. F. J. Walter, San Diego, Calif.—p. 424.
Lenticonus Posterior: Six Cases. T. H. Butler, Birmingham, England.—p. 425.
Histologic Background of Ocular Syndrome in Botulism. C. M. Swab, Omaha.—p. 437.
Practical Points in Tonometry. M. Cohen, New York.—p. 451.

## Archives of Otolaryngology, Chicago

**11:** 397-536 (April) 1930

Diseases of Esophagus. C. Jackson, Philadelphia.—p. 397.
Eye, Ear, Nose and Throat Complications Occurring in Patients in Hospital for Tuberculous. G. H. B. Terry, Oteen, N. C.—p. 403.
Submucous Resection of Nasal Septum in Children. F. W. White, New York.—p. 415.
Alleviation of Pain in Peritonsillar Abscess. M. R. Guttman, Chicago.—p. 426.
*Is Stuttering a Medical Problem? J. A. Glassburg, New York.—p. 430.
Otitic Abscess of Brain. A. Kovacs, Milwaukee.—p. 438.
Dry Necrosis of Mastoid: Four Cases. L. K. Guggenheim and D. P. Ferris, St. Louis.—p. 445.
*Inoperable Tonsil. J. C. Scal, New York.—p. 459.
*Survey of Hearing of School Children of San Francisco. F. H. Rodin, San Francisco.—p. 463.
*Iodized Oil as Aid in Diagnosis of Chronic Maxillary Sinus Disease. E. L. Jones, Wheeling, W. Va.—p. 475.
Recovery from Acute Osteomyelitis Following Radical Operation for Cure of Suppurative Frontal Sinusitis. S. R. Skillern, Jr., Philadelphia.—p. 485.
Tonsils and Adenoids. F. K. Hansel, St. Louis.—p. 490.

**Is Stuttering a Medical Problem?**—Stuttering, says Glassburg, is a medical problem, the treatment of which requires the services of the medical speech specialist aided by the oral surgeon, the rhinolaryngologist, the orthodontist, the psychologist and the trained teacher of speech.

**Inoperable Tonsil.**—Scal advocates treatment of inoperable tonsils by the implantation of removable platinum radon seeds as an adequate substitute for tonsillectomy in those cases in which surgery is contraindicated. Only one treatment is necessary. There is no hospitalization and no anesthetic, and the patient has no pain or discomfort in attending to his usual occupation. As compared with the roentgen treatment, the radium exerts its action only on the lymphoid tissues in the area implanted, without affecting the adjacent tissues. The roentgen rays affect all the tissues and result in annoying after-effects. Electrocoagulation likewise can be used only in skilled hands; even then there is the possibility of injuring the adjacent structures.

**Survey of Hearing of School Children of San Francisco.**—The phonograph audiometer was used by Rodin in his hearing survey of the school children of San Francisco. One hundred and eighteen schools were surveyed, with an enrolment of 36,191 children. On the first test, 6,592 children were found to have a loss of nine or more sensation units in one or both ears. On retest, 3,427 children were found to have a loss of nine or more sensation units in one or both ears, or 9.5 per cent. Four hundred and forty-one children, or 1.2 per cent, were referred for instruction in lip reading. One thousand and seventy-three notification cards were sent to the parents. Forty-three children attending the school for the deaf were examined. Twenty-four children had congenital deafness and nineteen had acquired deafness. Rodin advocates making a survey of the hearing of school children every two or three years.

**Iodized Oil as Aid in Diagnosis of Chronic Maxillary Sinus Disease.**—As an aid in making a diagnosis, Jones has found this procedure invaluable in the study of many obscure cases. He says that radiopaque oil can be injected into the maxillary sinus without harmful effects.

## Archives of Pathology, Chicago

**9:** 779-966 (April) 1930

*Pontile Gliomas. R. C. Buckley, Boston.—p. 779.
*Congenital Capillary Angioma of Parotid Gland. J. McFarland, Philadelphia.—p. 820.
Effect of Hemolytic Toxins on Nervous Tissue. A. Weil, Chicago.—p. 828.
*Human Infection with Actinomyces Necrophorus. J. S. Cunningham, Rochester, N. Y.—p. 843.
*Primary Carcinoma of Lung Following Trauma. H. G. Wells and P. R. Cannon, Chicago.—p. 869.
Preservation of Specimens in Color. G. L. Rohdenburg, New York.—p. 874.
Sickle Cell Anemia. B. Steinberg, Toledo, Ohio.—p. 876.
First Text of Pathology Published in America. E. R. Long, Chicago.—p. 898.

**Pontile Gliomas.**—A group of twenty-five tumors involving the pons and the cerebellum, previously unclassified, have been classified by Buckley. Although grouped as pontile gliomas, only four of these tumors were found to involve the pons alone; the remaining twenty-one involved the pons, the brachium pontis and the adjacent cerebellar hemisphere and cerebellopontile angle. The origin of this larger group involving the cerebellum and the pons could not be demonstrated from the gross examination. Ten of the twenty-five tumors were classified as glioblastoma multiforme. Here the average duration of life from the onset of symptoms to the fatal termination was only four months. Each of the tumors was large, soft and necrotic, with many hemorrhages and cysts. The basilar vessels and cranial nerves were often buried in the soft expanding tumor. The histologic structure of this rapidly growing type of glioma was similar to that found in glioblastoma multiforme of the cerebral hemispheres, except that at the periphery of the tumor the pattern of growth was modified by the invasion along the fiber tracts. The one example of astroblastoma proved to be the only instance of such a lesion to be found in the brain beneath the tentorium. Fourteen of the gliomas were slower growing tumors and were classified as protoplasmic, as fibrillary

astrocytoma or as spongioblastoma unipolare. The gross and histologic structure of these tumors was similar to that of such tumors found elsewhere in the brain. The average duration of life in patients of this group from the onset of symptoms to the fatal termination was two years, the extremes being four months and four years. The reaction of the brain against the advance of the tumor varied in degree. The response of glial elements, microglia, connective tissue and blood vessels was greatest at the periphery of the glioblastoma multiforme and least at the edge of the slower growing astrocytoma and spongioblastoma unipolare.

**Congenital Capillary Angioma of Parotid Gland.**—A case of congenial capillary hemangioma of the parotid gland of an infant is described by McFarland. Reports of thirty-three similar cases have been collected from the literature. The surgical removal of the entire affected gland is the operation of election and results in complete cure in most cases, though facial palsy has occurred in five cases. The tumor is benign. No case of recurrence is on record. Other varieties of angiomatous disease of the parotid gland are introduced into the bibliographic tabulation for purposes of comparison.

**Human Infection with Actinomyces Necrophorus.**—Two cases of necrobacillosis in man, the fourth and fifth instances of proved infection with *Actinomyces necrophorus* in man, the only fatal cases on record, and cases presenting hitherto undescribed types of human infection, were verified by Cunningham by bacteriologic study. The organisms obtained in the two cases were shown to be practically identical. Necrobacillosis is a disease with recognizable clinical features in man. Anaerobic cultures on a wider scale in the routine laboratory are suggested for detecting *Actinomyces necrophorus* in cases in which human necrobacillosis is suspected.

**Primary Carcinoma of Lung Following Trauma.**—A case is reported by Wells and Cannon of primary carcinoma of the lung, arising in the periphery of the left upper lobe, at or about the site of a demonstrated traumatism to the lung, which produced hemoptysis and diffuse subcutaneous emphysema. Roentgenograms made the day after the traumatism, which showed fracture of the left third, fourth and fifth ribs, gave no evidence of the existence of any neoplastic condition in the lung. Eleven months after the injury pulmonary symptoms appeared, and examination now revealed a neoplasm in the periphery of the left upper lobe at the site of the trauma, which continued to grow until death occurred twenty-three and one-half months after the pulmonary traumatism. The probable relationship of the trauma to the occurrence of the carcinoma in the lung is discussed.

## Archives of Surgery, Chicago

**20:** 713-884 (May) 1930

*Recurrent and So-Called Metastatic Giant Cell Tumor. C. F. Geschickter and M. M. Copeland, Baltimore.—p. 713.
*Emptying of Gallbladder Following Restoration from Acute Experimental Cholecystitis. G. T. Murphy and G. M. Higgins, Rochester, Minn. —p. 756.
*Goitrous Enlargement of Thyroid Gland Due to Amyloidosis. W. C. Hunter and D. B. Seabrook, Portland, Ore.—p. 762.
*Treatment of Bronchiectasis: Multiple Stage Lobectomy: Two Cases. P. N. Coryllos, New York.—p. 767.
*Comparative Value of Splanchnic and Spinal Analgesia in Treatment of Experimental Ileus. A. Ochsner, I. M. Gage and R. A. Cutting, New Orleans.—p. 802.
Inflammatory Cecal Tumors. J. A. Bargen and M. F. Jacobs, Rochester, Minn.—p. 832.
Occupational Therapy in Treatment of Fracture of Joint. J. W. Hinton, New York.—p. 851.
Correlations of Internal and External Pancreatic Secretion: IV. Effect of Isolation of Tail of Pancreas on Carbohydrate Metabolism. G. de Takáts, F. Hannett, D. Henderson and I. J. Seitz, Chicago.—p. 866.

**Recurrent and So-Called Metastatic Giant Cell Tumor.**—Forty-one cases of giant cell tumor showing clinical or microscopic evidence of malignant tendencies have been analyzed by Geschickter and Copeland. In the clinical group, twenty-six cases recurring after primary curettement were studied. Recurrence in this group was found to depend not on histologic structure but on a poor selection in the type of treatment applied in the individual case or on an incomplete operation. Advanced destruction of the bone shell, incomplete curettement, failure to use chemical or thermal cauterization or needless sacrifice of cortical bone at the operation, as well as an age over 35, were found to be factors predisposing to recurrence after curettement. In seven cases showing a microscopic resemblance to malignant disease, the histologic change was usually found to be the result and not the cause of the recurrence, being dependent on intervening infection, necrosis or an accentuated healing reaction following irradiation. In two cases, actual sarcoma with giant cells were found to be erroneously placed in this group. Eight cases of so-called metastatic giant cell tumors collected from the literature and from the surgical pathologic laboratory of the Johns Hopkins Hospital have been reviewed and abstracted. In no case were the metastatic nodules in the lungs composed of typical giant cell tumor, and in no case was an original tumor of proved benign giant cell structure found associated with death from metastasis. In four of the cases a diagnostic error was made, either in erroneously ascribing death from other causes to metastases or in failing to recognize the histology of the original lesion as sarcoma. In the other four cases, material from the original lesion was not saved for confirmation of the diagnosis, and therefore the possibility was pointed out that these might have been slowly growing osteogenic sarcomas present from the first or secondary sarcomas arising at the site of an unhealed lesion in bone. The differential microscopic diagnosis of giant cell tumor has been discussed, and a short summary of the diagnostic features of osteogenic sarcoma with giant cells is given. A review of the results of various types of treatment in more than 200 cases of giant cell tumor is presented.

**Emptying of Gallbladder Following Restoration from Acute Experimental Cholecystitis.**—On the basis of experimental observations made on both normal and abnormal gallbladders in dogs, Murphy and Higgins assert that the normal gallbladder undoubtedly empties by a contractile mechanism within the wall of the vesicle, and the diseased gallbladders do not empty because this contractile mechanism has become seriously impaired, making its usual response to the inciting stimulus impossible.

**Goitrous Enlargement of Thyroid Gland Due to Amyloidosis.**—An instance of advanced amyloidosis of the thyroid gland producing enlargement of the gland and symptoms of pressure stenosis of the trachea is reported by Hunter and Seabrook. The patient had a chronic pulmonary tuberculosis. Their study confirms the observation of previous investigators that in the thyroid gland amyloid substance is deposited chiefly in the vascular interalveolar spaces. Amyloidosis of the thyroid gland is seldom encountered in surgical practice. The nature of the process may be suspected or diagnosed at operation by the bacon-like or fatty appearance of the gland and distinguished from a malignant process by the almost complete lack of hemorrhage during the course of the operation.

**Treatment of Bronchiectasis: Multiple Stage Lobectomy.**—A clinical classification distinguishing different forms of bronchiectasis is suggested by Coryllos. The necessity of using a prolonged and progressive treatment against a chronic and progressive disease is shown. In advanced forms of bronchiectasis, only eradication of the diseased parenchyma of the lung can produce a cure. This, according to the individual case, should be done by resection (lobectomy), cauterization (cautery pneumectomy of Graham) or exteriorization (Whittemore). In order to decrease the mortality incident to these operative procedures, a technic of "multiple stage lobectomy" is outlined in which the following stages are systematically performed in the order named: artificial pneumothorax, phrenicectomy, thoracoplasty and lobectomy. In support of this method, physiologic, pathologic and clinical data are presented. Two cases of advanced bronchiectasis in which cure was achieved by the use of this technic are reported.

**Comparative Value of Splanchnic and Spinal Analgesia in Treatment of Experimental Ileus.**—Ochsner et al. assert that splanchnic analgesia will be ineffective in the treatment of ileus in those cases of mechanical intestinal obstruction in which the obstruction has not been previously relieved by

surgical intervention. Splanchnic analgesia is a method that should be used early and not as a last resort, since it can hardly be expected that a patient who has already absorbed a lethal dose of toxin can be revived by any means. The accessory supportive treatment of patients with ileus should not be neglected, especially the treatment for associated alkalosis, dehydration and chloride deficiency. As experimental splanchnic analgesia produces no marked motor effect on the large intestine, in patients treated by such analgesia the insertion of a rectal tube and the administration of an enema, in conjunction with the induction of the splanchnic analgesia, will probably be of value. In the late case, especially in the case of mechanical obstruction, at least one enterostomy should be performed prior to the induction of the splanchnic analgesia. In those cases of peritonitis in which the peritonitic process tends to be localized, splanchnic analgesia should be used cautiously and only after due consideration, because of the danger of converting a localized into a generalized process. Of the three general methods that have been devised for the production of splanchnic analgesia, the Wendlung technic, the Braun technic and the method of Kappis, the latter, which involves the introduction of a needle posteriorly through the flank, is almost invariably the method of choice in the treatment of ileus. Experimental evidence is conclusive that when nicotine is injected into the splanchnic area it is of little value in increasing intestinal movement and is also distinctly dangerous because of its marked cardiovascular effects. Experimental results indicate that splanchnic analgesia is preferable to spinal analgesia in increasing intestinal movement; increase in tone is especially noticeable. Blood pressure determinations should be made both before and after the introduction of an anesthetic solution into the splanchnic area, since a fall in blood pressure is invariably found after successful splanchnic blocks. Since the effect of splanchnic analgesia on the motility of the intestine is only transitory (lasting from six to thirty minutes in experimental animals), this procedure may be repeated in case the previous injection has not proved altogether successful after the lapse of as short a time as one hour. Additional stimulation of the colon, by means of an enema, may be of distinct value as an accessory to the induction of splanchnic analgesia, because of its stimulating effects on colonic movement, the colon being a part of the intestinal tract which is affected only slightly, if at all, by chemical section of the splanchnic nerves. Clinical observations in general surgical practice indicate that intestinal motility is much more frequently noted following splanchnic analgesia than following the induction of spinal analgesia, in spite of the fact that epinephrine has been used more frequently in the former method than in the latter method.

## Arkansas M. Soc. Journal, Little Rock

**26:** 213-238 (April) 1930

Inguinal Hernia. W. F. Smith, Little Rock.—p. 213.
Five Years' Experience with Radiotherapy in Uterine Conditions. J. S. Wilson, Monticello.—p. 215.
Banti's Disease. R. H. Willett, Jonesboro.—p. 219.
Medical Expert Witness. O. M. Bourland, Van Buren.—p. 220.

## California & Western Medicine, San Francisco

**32:** 217-304 (April) 1930

Thoughts on Angina Pectoris. W. S. Thayer, Baltimore.—p. 217.
*Acute Cholecystitis: Surgical Treatment. S. H. Mentzer, San Francisco.—p. 224.
Indirect Treatment of Presumably Syphilitic Child by Maternal Therapy During Lactation: Case. H. S. Campbell and K. Frost, Los Angeles.—p. 231.
Peptic Ulcer: Management. G. H. Lanphere, Los Angeles.—p. 236.
Injuries of Urogenital Tract. B. W. Wright, Los Angeles.—p. 240.
Glaucoma: Surgical Considerations. M. T. Riach, San Diego.—p. 242.
Indications for Surgery in Pulmonary Tuberculosis. H. E. Schiffbauer, Los Angeles.—p. 245.
Infection of Abdominal Wall with B. Welchii Following Enterostomy for Bowel Obstruction. E. Butler and G. Rhodes, San Francisco.—p. 248.
Hippocratic Medicine. L. Porter, San Francisco.—p. 249.
Ectopic Ventricular Tachycardia: Case. R. M. Clarke, Los Angeles.—p. 252.
Apparatus Used in Treatment of Fractures of Pelvis. S. Herzikoff, Los Angeles.—p. 253.
Incomplete Inversion of Uterus with Subsequent Pregnancy: Case. L. F. White, Los Angeles.—p. 254.

**Acute Cholecystitis.**—The analysis made by Mentzer shows that 1.5 per cent of 76,902 admissions to the San Francisco Hospital were for cholecystic disease; 31 per cent of these patients were operated on. Seventeen per cent of the hospital admissions for cholecystic disease were for acute cholecystitis. Twenty-three per cent of these (thirty-eight cases) were proved cases of acute gangrenous cholecystitis. Gallstones were present in only twenty-eight of the thirty-eight gangrenous specimens. The present attack initiated the first symptoms of cholecystic disease in eight of the thirty-eight patients. A diagnosis of acute cholecystitis was made in all but six of the thirty-eight patients. All but one were operated on within a few hours after entrance into the hospital. Cholecystectomy was performed in twenty-two cases and cholecystostomy in sixteen. The duration of convalescence and the time spent in the hospital were considerably less for the cholecystectomized patients. The mortality in acute cases of cholecystitis in which operation was not performed was 22 per cent. There was no mortality in sixteen patients that were operated on a few days after the acute symptoms had subsided. The mortality in forty nonoperative cases of subacute cholecystitis was 5 per cent. There were no deaths in nine surgical cases of nongangrenous acute cholecystitis. The mortality in thirty-eight cases of acute gangrenous cholecystitis was 26 per cent.

## Illinois M. Journal, Oak Park

**57:** 217-292 (April) 1930

Cooperation of Health Department with Practicing Physician. A. H. Kegel, Chicago.—p. 239.
Oculoglandular Form of Tularemia. D. T. Vail, Jr., Cincinnati.—p. 244.
Acute Food Sickness: Acute Food Infections, Infestations, Intoxications and Poisonings. G. Koehler, Chicago.—p. 251.
Obscure Ear Disease in First Year of Life. M. H. Cottle, Chicago.—p. 258.
Methyl Alcohol Poisoning. E. C. Burhans, Peoria.—p. 260.
Relation of Ear to Nasal Accessory Sinuses. N. Schoolman, Chicago.—p. 263.
Acute Epididymitis in Light of Recent Experimental Work. D. H. Pardoll, Chicago.—p. 265.
Acute Osteomyelitis of Spine. C. L. Patton, Springfield.—p. 268.
Necessary Pelvic and Abdominal Operations During Pregnancy. J. P. Greenhill, Chicago.—p. 272.
Radiation Therapy in Nonmalignant Conditions. H. A. Chapin, Jacksonville.—p. 278.
Control of Mosquitoes in Prevention of Malaria. A. F. Dappert, Springfield.—p. 282.
Multiple Sensitization in Allergic Diseases. S. J. Taub, Chicago.—p. 287.

## Indiana State M. Assn. Journal, Fort Wayne

**23:** 163-204 (April 15) 1930

Vomiting Problems in Children. E. C. Mitchell, Memphis, Tenn.—p. 163.
Nontuberculous Diseases of Lung Tissue. C. P. Emerson, Indianapolis.—p. 167.
Congenital Atresia of Esophagus. S. S. Aronson, Indianapolis.—p. 169.
Diphtheria Before Antitoxin. H. A. Cowing, Muncie.—p. 171.

## Journal of Bone & Joint Surgery, Boston

**12:** 253-504 (April) 1930

*Specificity of Light Action in Tuberculosis. W. M. Phelps, New Haven, Conn.—p. 253.
*Carbon Arc Light Treatment in Bone and Joint Tuberculosis. K. Pardee, Baltimore.—p. 270.
*Contribution to Pathogeny of Tendon Tumors of Giant Cells. J. Gonzalez-Aguilar, Santander, Spain.—p. 280.
Bony Fixation of Foot in Infantile Paralysis: Subastragalar Arthrodesis. W. H. Cole, St. Paul.—p. 289.
*Reconstructive Surgery in Paralytic Deformities of Leg. N. Dunn, Birmingham, England.—p. 299.
Teaching Model for Demonstration of Operative Correction of Severe Paralytic Valgus. L. Mayer, New York.—p. 309.
*Bone-Block Operation for Drop-Foot. W. C. Campbell, Memphis, Tenn.—p. 317.
Treatment of Disabilities Resulting from Low Back Derangements. E. G. Brackett, Boston.—p. 325.
Development of Juvenile Pes Valgus. M. Böhm, Berlin, Germany.—p. 333. (Translated by W. P. Blount, Milwaukee.)
*Tuberculosis of Symphysis Pubis. H. C. Bean, Salem, Mass.—p. 345.
Detailed Changes Characteristic of Healing Bone in Amputation Stumps. C. G. Barber, Cleveland.—p. 353.
*Effect of Irradiated Ergosterol on Healing of Experimentally Produced Fractures in Animals. H. A. Swart, Rochester, Minn.—p. 360.
Importance of Cautious Prognosis in Orthopedic Cases. J. J. Nutt, New York.—p. 369.
Pathogenesis of Congenital Clubfoot (Pes Equinovarus). R. J. Dittrich, Wichita, Kan.—p. 373.

*Use of Fascia Lata in Repair of Disability at Wrist. C. L. Lowman, Los Angeles.—p. 400.
*Fracture Dislocation of Fourth Lumbar Vertebra with Paralysis: Case with Recovery. S. S. Herzikoff, Los Angeles.—p. 403.
Congenital Malformation of Tibia and Fibula and Fibular Astragalar Articulation. P. W. Roberts, New York.—p. 414.
Cyst of Os Calcis. N. R. Smith, Bournemouth, England.—p. 416.
Pectoral Muscle Defects: Three Cases. G. A. Williams, Atlanta, Ga. —p. 417.
Complicated Traumatic Dislocation of Hip: Three Cases. I. Zadek, New York.—p. 419.
*New Method of Utilizing Traction in Treatment of Flexion Deformity of Hip in Hip Disease. S. S. Hanflig, Boston.—p. 429.
Crutch Attachment for Use in Cases of Paralysis of Triceps Muscle. F. R. Ober, Boston.—p. 433.
Shoulder Spica: Simple Method of Application. L. C. Chu, Peiping, China.—p. 434.
Device for Overcoming Nonbony Flexion Contractures of Knee. E. K. Cravener, Clifton Springs, N. Y.—p. 437.
Splint for Correction of Claw-Hand. J. S. Neviaser, New York.—p. 440.
Fracture Harness. E. T. Hier, Kansas City, Kan.—p. 444.

**Specificity of Light Action in Tuberculosis.**—The wavelength band lying between 320 and 380 millimicrons has been studied both clinically and experimentally by Phelps. Effects have been obtained which prove this band to be active. The chief effect is an acceleration of the processes of repair which may or may not be specific for tuberculosis, but which is essential in the retention of function. It is an indirect effect, general rather than local. The band between 320 and 380 millimicrons is found in all sunlight and in carbon arcs of 25 amperes or more using a carbon of known spectral distribution. Heliotherapy in tuberculosis can be as effectively carried out in cities at sea level as elsewhere. Longer exposures can be given if the erythema and tan-producing rays, from 300 to 320 millimicrons, are of small quantity or absent. Erythema and tan therefore are of no use as a basis of dosage given. Dosage should be measured in all sun therapy, and the method of measuring such dosage is outlined. Artificial sources of light containing the band between 320 and 380 millimicrons and comparatively free from the shorter wavelength are useful as sun substitutes.

**Carbon Arc Light Treatment in Bone and Joint Tuberculosis.**—Twenty-two children with bone and joint tuberculosis were treated by Pardee throughout the winter and spring with radiations from a high intensity carbon arc light. In the majority of cases the blood counts rose under treatment. Her figures support the theory that the effect of the light on the blood-forming tissues is a restoration of normal function, not a mere stimulation. The children tended to gain weight while under treatment. The favorable effect on the local tuberculous lesion was marked. The author feels that her results show that exposures to the radiations of the high intensity carbon arc light are of value in the treatment of bone and joint tuberculosis, especially during those months when little sunlight is available.

**Contribution to Pathogeny of Tendon Tumors of Giant Cells.**—Gonzalez-Aguilar regards the giant cell tumors of the tendons and tendon sheaths as true blastomatous formations of well differentiated elements of osteoperiosteal and histocytitary origin. The differentiation sometimes allows the formation of an osteoid tissue or at least of a connective tissue quite dense. Local cholesterosis is a function of the reticuloendothelial system which enters into the formation of the tumor. Hypercholesterinemia, which is an essential factor in the origin of the xanthoma, is without importance in the tumor of giant cells.

**Reconstructive Surgery in Paralytic Deformities of Leg.**—Dunn believes that muscle power being already deficient, every effort should be made to correct deformity by gradual methods. Division of tight structures usually means division of active muscles. Division weakens a muscle, so that it is less valuable for control of the limb or for transplantation; e. g., transplantations of the tensor fasciae femoris at the hip or knee must be less effective if the muscle has been allowed to retract as a result of division of its origin. In the lower extremity transplantation of muscles or tendons should be confined to the group with which they are normally in action. In all but the milder cases of paralysis of the foot, an arthrodesis of the tarsal joints is an essential preliminary to tendon transplantation and (or) tenodesis to insure the best final functional result.

**Bone-Block Operation for Drop-Foot.**—This operation has been employed by Campbell in more than 300 cases. End-results have been carefully analyzed in 225. The operation was efficient in 211 of these cases. There were fourteen in which the osseous process did not permanently prevent drop-foot, making the percentage of successful results 93.8. Although plantar flexion recurred in fourteen cases, in only ten, as demonstrated by the roentgenogram, was the process apparently defective. Therefore, there were four in which the roentgenogram demonstrated a well developed osseous process that did not mechanically prevent extension. These failures occurred in those patients with undue relaxation of all ligaments and soft structures about the ankle. Postoperative pain was a definite symptom in only four adults, and in only one was a secondary operation necessary to excise a portion of the graft. No child has complained of pain in the heel as a remote or permanent symptom. In not one of the 225 cases has subsequent arthritis been observed.

**Tuberculosis of Symphysis Pubis.**—Experience with one case cited leads Bean to say that in all cases of sacro-iliac lesion, inguinal pain, lower abdominal and upper thigh tenderness, roentgenograms of the symphysis pubis should be included before treatment is considered; that in cases in which there are acute symptoms, curettage should be instituted, with fixation later when the wounds are healed. In the absence of much bone, a graft is the only procedure that can give proper fixation and is justifiable at any age, if mechanical treatment —such as corsets, belts and braces—does not prove sufficient; finally, with fixation a definite and complete cure can be almost guaranteed.

**Effect of Viosterol on Healing of Experimentally Produced Fractures in Animals.**—Swart found that feeding viosterol to rabbits did not increase the rate of healing or the amount of callus formed in fractures of the tibia and fibula. There is some evidence that the administration of viosterol to animals by mouth will produce calcification in blood vessels and other soft tissues.

**Use of Fascia Lata in Repair of Disability at Wrist.**—Backward subluxation of the end of the ulna with failure of stability due to a lack of, or stretching of, the radio-ulnar ligament and weakness of the wrist progressing to the point of painfulness has been eliminated by Lowman by passing a strip of fascia lata through the radius and around the neck of the ulna outside the periosteum, so as to bind the two bones more closely together by acting somewhat like the orbicular ligament at the head of the radius. A later procedure, a secondary step, in which an osteotomy of the radius was done to reduce its curve, has placed the bones in a more parallel position and greatly increased the function in pronation and supination, without displacement of the ulna, except in a slight degree, in proportion to what it was before operation.

**Fracture Dislocation of Fourth Lumbar Vertebra with Paralysis.**—Herzikoff relates the case of a man who was pinned between the skip of a crane and the wall of a building. He sustained an anterior dislocation of the fourth lumbar vertebra on the fifth equal to the anteroposterior diameter of the vertebral body. It was also displaced laterally to the left about one-fifth the lateral diameter of the body of the bone. The superior articular processes of the fifth lumbar vertebra were fractured. In addition there were fractures of the tip of the spine of the fourth lumbar vertebra and of the first, second, third, fourth and fifth transverse processes on the right side and the third, fourth and fifth on the left. The result was immediate motor paralysis of both legs. Treatment was by closed reduction and resulted in complete recovery.

**New Method of Utilizing Traction in Treatment of Flexion Deformity of Hip in Hip Disease.**—The apparatus described by Hanflig permits traction in the line of deformity and enables one to perform the Thomas flexion test without disengaging any of the apparatus. It permits immediate and secure changes in the direction of traction. As the extremity is pulled on, it is suspended and counterbalanced by

ropes passing up and backward to the head of the bed, where they are pulled on by weights heavy enough to keep the leg suspended in whatever position it is placed.

## Journal of Pharmacol. & Exper. Therap., Baltimore

**38:** 349-489 (April) 1930

Growth and Bone Changes in Rats Injected with Anterior Pituitary Extract. M. B. Handelsman and E. F. Gordon, Baltimore.—p. 349.
Effect of Hypertonic Solutions of Sodium Arabinate on Cerebrospinal Fluid Pressure. J. Hughes and L. Laplace, Philadelphia.—p. 363.
Potassium and Calcium Content of Brain Under Magnesium Sulphate Anesthesia. W. E. Callison, J. Lander and F. P. Underhill, New Haven, Conn.—p. 385.
Effect of Morphine Sulphate, Atropine Sulphate and Hyoscine Hydrobromide on Intact Intestine in Unanesthetized Dogs. C. M. Gruber, W. W. Greene, C. S. Drayer and W. M. Crawford, St. Louis.—p. 389.
Effect of Pituitary Extract and Morphine Sulphate on Excised Dog's Intestine. C. M. Gruber and G. Pipkin, St. Louis.—p. 401.
Colloid Chemistry of Antisepsis and Chemotherapy: I. Mode of Combination of Antiseptic Dyes with Proteins. A. D. Hirschfelder and H. N. Wright, Minneapolis.—p. 411.
Id.: II. Does Fraction of Antiseptic Which Has Been Adsorbed on Protein Still Exert Antiseptic Action? H. N. Wright and A. D. Hirschfelder, Minneapolis.—p. 433.
*Immediate Antidiuretic Action of Pituitary Extract. J. B. Ross and R. L. Stehle, Montreal.—p. 451.
*Cardiac Action of Pituitary Extract (Posterior Lobe). J. B. Ross, N. B. Dreyer and R. L. Stehle, Montreal.—p. 461.
*Action of Pituitary Extract on Blood Pressure. B. B. Raginsky, J. B. Ross and R. L. Stehle, Montreal.—p. 473.

**Immediate Antidiuretic Action of Pituitary Extract.**—Experiments to determine the cause of the immediate cessation of the flow of urine that follows the injection of pituitary extract are described by Ross and Stehle. The results indicate that ureteral spasm is not the chief or perhaps even an important factor in producing this effect.

**Cardiac Action of Pituitary Extract.**—The coronary flow and peripheral output of the heart have been determined by Ross et al. simultaneously before and after the administration of pituitary extract. The results indicate that coronary spasm is at least one of the important factors that may cause a fall in blood pressure under certain circumstances when pituitary extract is administered. Possible complications due to the constriction of the pulmonary vessels and of a direct action on the heart muscle are also discussed.

**Action of Pituitary Extract on Blood Pressure.**—The actions of pituitary extract on the blood pressure of the dog under chlorbutanol, ether and phenobarbital are described by Raginsky et al. It is shown that there are quantitative differences in responses and that the nature of the response is determined by the extent to which the coronary vessels are affected. The latter may be so affected as to produce variable degrees of circulatory depression.

## Journal of Urology, Baltimore

**23:** 397-492 (April) 1930

*Observations on Bacteriophage in Infections of Urinary Tract. A. P. Krueger, H. K. Faber and E. W. Schultz, Stanford University, Calif.—p. 397.
Elongation of Ureter. V. Vermooten, New Haven, Conn.—p. 427.
Experimental Study of Action of Sodium Iodide on Excised and Intact Ureters of Dogs. H. R. Trattner, H. B. Wright and O. W. Barlow, Cleveland.—p. 441.
Urethral Ectopic Ureter in Female Without Incontinence. D. M. Davis, Baltimore.—p. 463.
Geographic Incidence of Urolithiasis with Consideration of Etiologic Factors. R. J. Holmes and M. M. Coplan, Miami, Fla.—p. 477.
New Urethral Anesthetic Tablet Depositor. B. A. Thomas, Philadelphia.—p. 491.

**Bacteriophage in Infections of Urinary Tract.**—The data obtained by Krueger et al. by periodic examinations of specimens of urine from eight cases of acute urinary infection treated with alkalis by mouth indicate that alkalization, when effective, may act in part by facilitating enhancement of the virulence of bacteriophages naturally occurring in the urine, probably by providing the optimal reaction for bacteriophagy. Of a total of twelve patients with acute urinary tract infection, only one, or 8 per cent, harbored a strain of *B. coli* resistant to the bacteriophages in their possession, whereas among seventy-seven patients suffering from chronic infections of the urinary tract, forty-two, or 54 per cent, were infected with bacteriophage-resistant organisms. In thirty-five chronic cases bacteria capable of being completely lysed by one or more races of bacteriophage were found. Sixteen of these patients were treated with pooled bacteriophage suspensions, while nineteen received "matched" individual races of bacteriophage. In both groups the bacteriophage suspensions employed were found by preliminary tests to be fully active on the causal organism and were administered by subcutaneous injections and by instillations into the bladder and kidney pelves. In only three patients among the sixteen receiving pooled suspensions was a prompt recovery noted; two patients failed to respond at all to the treatment, and eleven gradually recovered. Among the nineteen patients to whom "matched" individual races of bacteriophage were administered there occurred only one prompt recovery, four total failures and fourteen gradual recoveries. There were then twenty-five patients out of thirty-five treated in whom recovery was gradual and not clearly attributable to the bacteriophage itself; four instances of immediate and striking response, and six complete failures.

## Kansas M. Soc. Journal, Topeka

**31:** 119-156 (April) 1930

Immediate Treatment of Severely Injured: General Traumatism—Shock. L. V. Hill, Kansas City.—p. 119.
Fractures, Except Fractures of Skull. J. A. Burger, Kansas City.—p. 121.
Unconscious Patient, Including Fractures of Skull. H. W. King, Kansas City.—p. 124.
Gunshot Injuries Received in Civil Life. G. H. Hobson, Kansas City.—p. 127.
Burns. C. O. West, Kansas City.—p. 129.
Technic of Emergency Life-Saving Endeavors. D. C. Pette, Kansas City.—p. 131.
Focal Cerebellar Disease. W. C. Menninger, Topeka.—p. 135.
Wertheim Interposition. L. S. Nelson, Salina.—p. 138.
Old Remedies and New. R. H. Major, Kansas City, Mo.—p. 142.

## Medical Journal & Record, New York

**131:** 389-440 (April 16) 1930

Fundamentals of Practical Psychology. G. B. Lake, Chicago.—p. 389.
Weight Reduction as Treatment for High Blood Pressure. R. H. Rose, New York.—p. 391.
Allergy in Noninfectious Diseases. M. B. Sulzberger, New York.—p. 392.
Sciatica. E. Boncina, New York.—p. 395.
Study of Eleven Hundred Dextrose Tolerance Tests. H. J. John, Cleveland.—p. 398.
Fetishism in Female. R. Alexander, Los Angeles.—p. 402.
Coronary Infarct and Angina with Abdominal Symptoms. G. Werley, El Paso, Texas.—p. 405.
Uterine Hemorrhage Complicating Pregnancy. B. Mann, Philadelphia.—p. 407.
Complete Lacerations of Perineum and Repair. L. E. Phaneuf, Boston.—p. 410.
Value of Radiography in Obstetrics. H. J. Epstein and A. J. Fleischer, New York.—p. 412.
Should Curet Be Scrapped? H. E. Stein, New York.—p. 414.
Protein Therapy in Gonococcic Salpingitis. H. H. Johnson and J. S. Diasio, New York.—p. 416.
Management of Postpartum Breast. J. Walker, Philadelphia.—p. 418.
Aspects of Mechanism of Labor. A. J. Rongy, New York.—p. 420.
Method of Hubert Kahle for Abrupt Withdrawal of Narcotics. H. F. W. Petters, Englewood, N. J.—p. 423.
California Medicine. J. W. Shuman, Los Angeles.—p. 425.

## New England J. of Medicine, Boston

**202:** 705-748 (April 10) 1930

Fracture of Os Calcis. O. J. Hermann, Boston.—p. 705.
Relation of Constitutional Inadequacy to Atrophic Arthritis. M. Smith, Ann Arbor, Mich.—p. 712.
Diphtheria Prevention in Brookline. F. P. Denny, Brookline, Mass.—p. 716.
Annual Report of Division of Adult Hygiene of Massachusetts Department of Public Health. H. L. Lombard, Boston.—p. 719.
Appendicitis in Pregnancy. B. B. Landry, Hartford, Conn.—p. 722.
Malignant Disease of Skin. L. S. McKittrick, Boston.—p. 725.
Id. A. W. Cheever, Boston.—p. 726.
Id. H. Friedman, Boston.—p. 727.
Injection Treatment of Varicose Veins. J. F. Gile, Hanover, N. H.—p. 729.

**202:** 749-796 (April 17) 1930

Carcinoma of Prostate. G. G. Smith, Boston.—p. 756.
Present Needs in Tuberculosis Control. B. Goldberg, Chicago.—p. 761.
Vincent's Angina. G. O. Cummings, Portland, Maine.—p. 768.
Facts, Figures and Fiction in Social and Health Statistics. H. W. Green, Cleveland.—p. 771.

## New York State J. of Medicine, New York

**30:** 433-494 (April 15) 1930

Intragastric Photography: Experience in Seventy Cases. B. M. Bernstein and I. Gray, New York.—p. 433.
Etiology of Hay-Fever. A. A. Thommen, New York.—p. 437.
Rôle of Vegetative Nervous System in Epilepsy and Migraine. S. Brock, New York.—p. 442.
Abscess of Epiglottis: Case. G. B. Gilmore, New York.—p. 448.

## Northwest Medicine, Seattle

**29:** 149-194 (April) 1930

Epidemic Encephalitis. G. E. Price, Seattle.—p. 149.
Pachymeningitis Hemorrhagica Interna. N. W. Clein, Seattle.—p. 153.
Infiltrating Glioma. D. G. Dickerson, Seattle.—p. 154.
Unusual Complications of Mastoiditis. C. W. Shannon, Seattle.—p. 156.
Lateral Sinus Infection and Sympathetic Meningitis. V. W. Spickard, Seattle.—p. 158.
Routine Complementary Feeding of New-Born. J. E. Toothaker, Centralia, Wash.—p. 158.
Tetany and Kindred Conditions. A. E. Wade, Seattle.—p. 160.
*Pylorospasm of Infants. D. M. Dayton, Tacoma.—p. 163.
High Acid Urine Not True Acidosis. A. H. Gray, Seattle.—p. 164.
Impetigo Contagiosa Neonatorum. H. C. Olmsted, Seattle.—p. 166.
Asthma of Nasal Origin. C. Smith, Spokane, Wash.—p. 169.
Modification of Sippy Cardiospasm Dilator. J. H. Fitzgibbon, Portland, Ore.—p. 171.
Amebiasis in Northwest. G. H. Hummel, Salem, Ore.—p. 173.
Extrapleural Thoracoplasty. P. Schonwald, Seattle.—p. 177.
Consultation in General Practice. E. J. Jasper, Astoria, Ore.—p. 183.

**Pylorospasm of Infants.**—Dayton describes two babies having symptoms similar to those found in the pyloric stenosis of infancy. Treatment with phenobarbital sodium, from one-sixth to one-fourth grain (11 to 16 mg.) every four hours, gave striking results.

## Occupational Therapy & Rehabilitation, Baltimore

**9:** 63-125 (April) 1930

Results of Unguided Occupations. C. L. Vaux, Central Islip, N. Y.—p. 63.
*Occupational Therapy in General Hospital. I. F. Sands.—p. 69.
Psychologic Objectives in Physical Program for Mentally Ill. J. E. Davis, Perry Point, Md.—p. 77.
*Occupational Therapy and What It Can Mean to Sick. M. Hinenburg, New York.—p. 83.
Occupational Therapy at James Whitcomb Riley Hospital for Children. W. Conrick.—p. 93.
Museum Meanderings: I. Introduction. W. R. Dunton, Jr.—p. 103.

**Occupational Therapy in General Hospital.**—The cost of hospitalization is so great that the test of the value of any adjunct to the hospital must be its possibility of shortening the stay of the patient. Sands believes that occupational therapy can do this when properly administered. By improving the morale of the patient, one puts him in better condition to benefit by other treatment; mental poise is developed, and weak muscles are strengthened. These are direct results.

**Occupational Therapy and What It Can Mean to Sick.**—Hinenburg asserts that at the Montefiore County Sanatorium the total expenditure for the maintenance of the occupational therapy department is almost $5,000 a year, of which 20 per cent represents expenditure for supplies and 80 per cent the salaries of five workers. The income from the sale of articles made by the patients in this department is almost $1,700 a year, leaving a net cost to the hospital of less than 10 cents a day for each patient under treatment. This expenditure is less than the per capita cost of medication and is about one sixth of the raw food cost a day.

## Pennsylvania M. Journal, Harrisburg

**33:** 429-526 (April) 1930

Premature Infants. J. H. Hess, I. M. Chamberlain and E. C. Lundeen, Chicago.—p. 429.
Diagnosis and Treatment of Pyodermias. W. H. Guy, Pittsburgh.—p. 442.
Early Diagnosis of Cancer. A. J. Bruecken, Pittsburgh.—p. 445.
Physician and Mental Hygiene. J. A. Jackson, Danville and L. M. A. Maeder, Philadelphia.—p. 449.
Epididymitis. L. P. Gibbons, Scranton.—p. 453.
Characteristics of Cystic Tumors of Testicle. J. E. O'Toole, Scranton.—p. 456.
Differential Diagnosis and Treatment of Solid Tumors of Testicle: Teratoma. T. C. Stellwagen, Jr., Philadelphia.—p. 458.
Head Injuries from Neurologist's Standpoint. G. J. Wright, Pittsburgh.—p. 464.
Surgical Management of Cerebral Trauma. C. H. Frazier, Philadelphia.—p. 466.
Treatment of Nevi. J. V. Klauder, Philadelphia.—p. 472.

## Physical Therapeutics, New York

**48:** 177-228 (April) 1930

Vibratory Effects on Spinal Reflexes. M. L. H. A. Snow, New York.—p. 177.
Physical Therapy as Adjunct in Treatment of Disease in Ophthalmology and Otolaryngology. C. B. Sputh, Indianapolis.—p. 195.
Education in Physical Therapy. E. N. Kime, Indianapolis.—p. 202.
Rational Teaching Methods in Physical Therapy. D. Kobak, Chicago.—p. 205.

## Surgery, Gynecology & Obstetrics, Chicago

**50:** 655-782 (April) 1930

*Cholecystitis: Bacteriologic and Experimental Study of 300 Surgically Resected Gallbladders. A. C. Nickel and E. S. Judd, Rochester, Minn.—p. 655.
Pseudotuberculous Salpingitis. J. Denton and G. Dalldorf, New York.—p. 663.
Solitary Cysts of Kidney: Seven Cases. A. B. Hepler, Seattle.—p. 668.
*Inquiry into Basic Cause and Nature of Cervical Cancer. K. V. Bailey, Manchester, England.—p. 688.
Spastic Ileus. L. M. Zimmerman, Chicago.—p. 721.
Operation for Carcinoma of Sigmoid. E. Pòlya, Budapest, Hungary.—p. 733.
Warren Apron in Repair of High Laceration of Rectum Associated with Third Degree Laceration of Pelvic Floor. L. K. P. Farrar, New York.—p. 741.
Chronic Duodenal Ulcer. J. B. Deaver, Philadelphia.—p. 745.
Pseudomucinous Cystadenoma: Thirty Cases. J. C. Masson and R. A. Hamrick, Rochester, Minn.—p. 752.
*Congenital Dislocation of Hip. C. H. Jaeger, New York.—p. 757.
Four Rare Rectal Tumors. H. Fried and H. B. Stone, Baltimore.—p. 762.
*Use of Intravenous Dextrose in Diabetic Patients. H. J. John, Cleveland.—p. 769.

**Cholecystitis: Resected Gallbladders.**—Of the cultures made by Nickel and Judd from 300 gallbladders, 150 were sterile. Of the 150 cases in which the cultures were positive, the predominating organism in sixty-six was a streptococcus; in forty-five, a bacillus, and in thirty-nine, a staphylococcus or other related cocci. In this series of 300 gallbladders there were sixty-five strawberry gallbladders, of which forty-six were sterile. From nine gallbladders a streptococcus was isolated; from seven, a bacillus, and from three, *Staphylococcus albus*. In most of the cases in which a positive culture was obtained from strawberry gallbladders, there also was a complicating factor such as a stone in the cystic or common bile duct, or there was perihepatitis definite enough to be mentioned in the surgeon's report. The majority of surgically resected gallbladders from patients with acute or subacute cholecystitis contained pathogenic bacteria, whereas the majority from patients who had chronic cholecystitis were sterile. Streptococci isolated from grossly diseased gallbladders are of etiologic significance, since they tend to reproduce the cholecystitis and cholelithiasis in experimental rabbits when injected intravenously. The colon bacillus also may have a selective action for the gallbladder. It is usually found with the streptococcus and is found frequently in relatively acute cases or in cases in which there are stones in the common or cystic duct. Staphylococci also are encountered, but the authors found them to be nonpathogenic for the gallbladders of rabbits when injected in pure culture.

**Inquiry Into Basic Cause and Nature of Cervical Cancer.**—Bailey asserts that cervicitis, erosion of the cervix, is definitely related to cancer of the cervix. This relationship is effected through the agency of a factor common to the two—an associated inflammatory exudate in contact with epithelium. This is the intermediate causal factor and is constant. The basic cause of cervical cancer is to be found in this constant factor which is associated with all cell reaction, including that of cancer inception. As far as the cervix uteri is concerned, he is inclined to the belief that the initial causal factor concerned in the production of the intermediate causal factor is bacterial, and he is moreover concerned to a large degree with the well known septic organisms. Recurrent attacks of specific intensity, from the epithelial standpoint, involving epithelium during the danger period, result in the production of cancer. The question of the time at which this attack is made, therefore, plays its part, and this fact is undoubtedly instrumental in minimizing this catastrophe. Whatever initial causes there are in the production of cancer growths, whether

bacterial or chemical, the effect is produced through the agency of this constant intermediate factor.

**Congenital Dislocation of Hip.**—Without force or violence, and without an anesthetic, Jaeger gradually replaces the dislocated head in the socket by means of a pressure pad over the trochanter while the leg is held in marked abduction by means of a long hip splint. This is done (1) to prevent the deformities that inevitably develop; (2) to make use of the very rapid growth in infancy to aid in the formation of a socket, and (3) to reduce the dislocation without traumatism, thus avoiding the consequences of rough manipulation.

**Intravenous Use of Dextrose in Diabetic Patients.**—The method used by John has been the intravenous administration of 250 cc. of a 10 per cent solution of dextrose to which from 20 to 50 units of insulin has been added, the amount of insulin depending on the severity of the diabetes and the height of the blood sugar at the time. This procedure can be repeated two or even three times a day, as the need for it is indicated.

## Tennessee State M. Assn. Journal, Nashville

**23:** 115-150 (April) 1930

Congenital Polycystic Kidney: Two Cases. F. K. Garvey and T. R. Barry, Knoxville.—p. 115.
Cancer of Rectum and Rectosigmoid. J. B. Haskins, Chattanooga.—p. 121.
Obstetric Statistics in Nashville and Davidson County. L. J. Caldwell, Nashville.—p. 127.
Problems of Recovered Psychiatric Patient. E. D. Dorris, Bolivar.—p. 130.
Significance of Abdominal Pain. L. E. Coolidge, Greeneville.—p. 133.
Coronary Occlusion. H. F. Crawford, Memphis.—p. 136.

## Texas State J. of Medicine, Fort Worth

**25:** 779-859 (April) 1930

Congenital Anomalies of Neck. G. A. Pagenstecher, San Antonio.—p. 786.
Treatment of Thyroglossal Duct Cysts. G. D. Mahon, Jr., Dallas.—p. 789.
Traumatic Injuries of Knee Joint. S. P. Cunningham, San Antonio.—p. 791.
Surgical Treatment of Spastic Paralysis. W. B. Carrell, Dallas.—p. 796.
Radiologic Studies of Simple Fractures. P. Hunt, Texarkana.—p. 799.
Focal Infections as Pertaining to Pyelitis and Pyelonephritis. H. L. Cecil, Dallas.—p. 800.
Value of Tests for Renal Function. M. D. Bell, Dallas.—p. 804.
Nervous Indigestion. L. Rice, San Antonio.—p. 805.
Laryngeal Tuberculosis. L. B. Stephens, Paris.—p. 806.
Review of Pathologic Findings in Kidneys in 100 Consecutive Necropsies. C. B. Sanders and H. Hartman, Galveston.—p. 811.
Plea for More Uniformity Among Cities and Counties in Handling Communicable Diseases. W. A. King, San Antonio.—p. 815.
Mineral Wells. J. M. Chamberlin.—p. 820.

## Wisconsin M. Journal, Madison

**29:** 185-248 (April) 1930

*Sterility. R. S. Cron, Milwaukee.—p. 185.
Dangerous Experiments in Treatment of Diabetes. E. L. Sevringhaus, Madison.—p. 191.
Use of Sodium Amytal in Major Surgery. A. S. Jackson, Madison.—p. 195.
Cancer Mortality Statistics in Wisconsin. P. F. Greene, Madison.—p. 200.
Institutional Infections and Prophylactic Cold Vaccines. F. R. Janney, Milwaukee.—p. 205.
Principles of Roentgentherapy: IV. Systemic Effect of Roentgen Rays; Roentgen Reaction in Pathologic Tissue. E. A. Pohle, Madison.—p. 207.
Diagnostic Problem. L. M. Warfield, Milwaukee.—p. 212.
Ureterocele: Two Cases. J. B. Wear and I. R. Sisk, Madison.—p. 213.
Thrombosis of Inferior Vena Cava: Case. A. L. Banyai, Wauwatosa.—p. 215.

**Sterility.**—In a series of ninety-two sterile couples studied, Cron has observed thirty-one pregnancies following various methods of treatment. The majority of the pregnancies progressed to full term. Huhner's postcoital and Rubin's tubal patency tests, and the use of radiopaque liquids, have been found to be of great assistance in determining the cause for childless marriages. Endocervicitis and cervicitis is a common cause of sterility in the female. Treatment by radial cauterization of the infected cervix has made pregnancy possible in almost 30 per cent of these women. Cron has observed at least twenty-three women who were able to become pregnant following the forcing of carbon dioxide through the uterus and fallopian tubes. Many other causes for infertility have been observed.

# FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Journal of Children's Diseases, London

**27:** 1-80 (Jan.-March) 1930

Congenital Neurosyphilis. F. R. Ferguson and M. Critchley.—p. 1.
Arrest of Physical Development (with Respiratory Dysrhythmia) Following Epidemic Encephalitis. C. Worster-Drought and T. R. Hill.—p. 14.
Surgical Treatment (Stoffel's Operation) of Spastic Paralysis in Children. J. G. Johnstone.—p. 17.
Cardiac Malformation: Cor Triloculare Biventriculare with Mirror Picture Dextrocardia. J. Smith.—p. 26.
Recovery from Pneumococcal Meningitis. H. N. Stoessiger.—p. 35.
Pediatric Eponyms: II. Parrot's Nodes. W. R. Bett.—p. 40.

## British Medical Journal, London

**1:** 629-676 (April 5) 1930

*Sterility in Woman. W. B. Bell.—p. 629.
*Psittacosis. R. Hutchison, R. A. Rowlands and S. L. Simpson.—p. 633.
*Etiology of Pellagra. W. R. Aykroyd.—p. 647.
*Injection Treatment of Hydrocele. G. B. D. Gray.—p. 649.
Unsuspected Trichinosis. E. Herzberg and I. Vitenson.—p. 650.

**Sterility in Woman.**—Bell says that no woman should be subjected to unpleasant examinations or treatment for sterility per se, until her husband has been proved fertile. A considerable percentage of men are temporarily or permanently sterile. Statistics concerning sterility in women generally are inevitably vitiated by the widespread adoption of contraceptive measures. There is no evidence that women are more infertile now than they were fifty years ago. Some congenital anomalies of the genital tract are amenable to treatment. Of the acquired lesions causing sterility, infections of the fallopian tubes are the most prominent. Recent methods of investigation and of surgical treatment afford the hope that in some cases relief may be effected. Conservation of function, when possible, should always be attempted in operations on the female genitalia. Physiologic derangements of the metabolism and the regulators thereof, and dietetic factors, are becoming well understood, and this may soon lead to improvements in treatment. Psychic factors doubtless are responsible for both voluntary and involuntary sterility. Good health, a natural mode of life, and a normal psychologic outlook, in the absence of physical defects and lesions, are the concomitants of natural reproduction.

**Psittacosis.**—Hutchison et al. review twenty-seven cases of psittacosis and present a summary of much of the older literature on the subject.

**Etiology of Pellagra.**—Aykroyd is of the opinion that the evidence at the moment seems decidedly against the theory of amino-acid deficiency. Investigation of the distribution and properties of vitamin $B_2$ seems a promising line of attack, though at present it would be premature to regard vitamin $B_2$ deficiency and pellagra as synonymous.

**Injection Treatment of Hydrocele.**—Gray relates some of his experiences with the use of Morestin's solution—equal parts of phenol, glycerin and alcohol.

## Journal of Coll. of Surg. of Australasia, Sydney

**2:** 300-446 (March) 1930

Difficulties and Fallacies in Radiologic Diagnosis of Hydatid Infection. C. C. Anderson.—p. 301.
*Complement Fixation Test in Hydatid Disease. K. D. Fairley and F. E. Williams.—p. 317.
Treatment of Fractures: Lower Limb. C. E. Corlette.—p. 335.
Concerning Epithelial Tumors of Vermiform Appendix. E. S. J. King.—p. 364.
Comparative Anatomy of Spleen and Colon Fixation. C. MacKenzie.—p. 385.
Gillies Tubed Pedicle Flap in Cleft Palate. B. Quick.—p. 395.
Application of Sympathetic Ramisection. N. D. Royle.—p. 401.
Sympathetic Ramisection as Means of Treatment of Spastic Paralysis. R. B. Wade.—p. 406.
*Spontaneous Gastroduodenostomy. E. T. Cato.—p. 414.
Skiagrams of Hydatid Disease of Bone. J. G. Edwards.—p. 416.
*Carcinoma of Face: Unusual Case. R. A. Willis.—p. 417.
Epithelioma of Lip with Visceral Metastases. R. J. Wright-Smith.—p. 421.
Sweat Gland Adenoma. E. S. J. King.—p. 424.
Gasserian Ganglion Exposure. E. D. Ahern.—p. 428.
*Rare Cause of Intestinal Strangulation. M. P. Susman.—p. 429.

**Complement Fixation Test in Hydatid Disease.**—The results of the complement fixation test for hydatid disease in more than 1,500 patients are analyzed by Fairley and Williams. Positive results were observed in seventy-five of 143 patients (52.4 per cent) tested before their first operation for hydatid infestation. In only about one in three of those with uncomplicated or degenerated cysts was a positive result obtained, though this was almost invariable in cases of recent rupture or suppuration of the cyst (within about a month preceding the test). It is concluded that the fixation of more than six minimum hemolytic doses of complement by the serum of a patient not previously operated on for hydatid disease suggests that the cyst has either ruptured or undergone suppuration at a recent date. In the adult, positive results with the test are found more frequently in cases of pulmonary infestation than with cysts elsewhere. No obvious correlation was found between the presence or the absence of daughter cysts and the results of the test. Of fifty-three patients with residual or recurrent cysts, only twenty-eight (52.8 per cent) showed a positive result with the test. Any patient whose serum fixes six minimum hemolytic doses of complement more than nine months after operation is probably harboring further active cysts, but on the evidence available at present the persistent fixation of three minimum hemolytic doses of complement cannot be regarded as diagnostic of the presence of other cysts until more than two years has elapsed since the operation. Whenever possible, the number of minimum hemolytic doses of complement fixed by the serum of the patient should be determined toward the end of the second week after operation, as this information in conjunction with that from tests about five and ten months after operation gives valuable evidence regarding the possible presence of residual or recurrent cysts. In the authors' experience the test is specific, though they have not had the opportunity of testing serum from patients with other helminthic infestations. Prior to the first operation for hydatid disease the fixation of four and a half minimum hemolytic doses of complement by the serum of a patient is diagnostic of hydatid infestation, as is the fixation of three minimum hemolytic doses, if this is confirmed on the occasion of a second test. The usual cause of failure to react with this test in cases of hydatid infestation is insufficient absorption of antigen from the cyst. Failure of the serum to fix three minimum hemolytic doses of complement in the presence of hydatid antigen does not exclude the presence of echinococcal infestation either prior to the first operation for this disease or when the question of residual or recurrent cysts is being considered. Such a reaction is valuable evidence in helping to exclude recent rupture or suppuration in a cyst, for in these cases the reaction is almost invariably positive, the exceptions being the rare cases in which the cyst fluid possesses no antigenic properties or those in which suppuration has occurred in a degenerated cyst.

**Spontaneous Gastroduodenostomy.**—Cato records a case of penetrating gastric ulcer of the lesser curvature which formed a gastroduodenal fistula, that is, really a spontaneous gastroduodenostomy. The patient was cured.

**Carcinoma of Face.**—Willis records a case of epidermoid carcinoma of the face, structurally exhibiting both squamous and rodent characteristics, which, while forming no local metastases, had effected an entry into a main vein and had thus produced remote blood borne metastases.

**Rare Cause of Intestinal Strangulation.**—Susman performed an immediate celiotomy for acute perforation of a chronic gastric ulcer. The abdomen was found flooded with gastric contents and fluid, so he made a small suprapubic incision and inserted a 1.25 cm. (half inch) drainage tube. There was a moderate amount of discharge for a day; the tube was removed thirty-six hours after operation. The patient made good progress until the fifth day, that is, three and a half days after removal of the tube, when, during an attack of coughing, about 22.5 cm. (9 inches) of small intestine came through the stab wound. Attention was not called to his condition until several hours later, by which time the strangulated portion of intestine was gangrenous. Susman enlarged the stab wound to free the intestine and did a resection and anastomosis, but the patient died two days later from ileus and spreading peritonitis.

## Jour. of Obst. & Gynec. of British Empire, Manchester

**37:** 1-212 (Spring) 1930

*Stillbirth Due to Intracranial Injury. J. Partridge.—p. 1.
*Influence of Certain Social Changes on Maternal Mortality and Obstetric Problems—1834-1927. H. E. Collier.—p. 27.
Albuminuria in Pregnancy and Labor. A. Crook.—p. 48.
Acute Sacculation of Uterus. W. F. Shaw.—p. 72.
Tetany Complicating Pregnancy Toxemia: Case. G. King.—p. 76.
Local Sequelae After Radium Treatment. N. Asherson.—p. 84.
Function of Rabbit Cervix During Coitus. A. Walton.—p. 92.
Hydatid Cysts (Taenia Echinococcus) in Broad Ligament. J. W. Bride.—p. 96.
Site of Human Placenta. M. P. Rucker.—p. 99.

**Stillbirth Due to Intracranial Injury.**—Partridge suggests that in a civilized community of orthograde habits, the time may come when increasing mental ability and culture will come to a standstill, because such offspring as have the best cranial development are frequently injured at birth by the too rigid walls of the necessarily stable female pelves. The only means of evading such an eventuality will be in devising a new exit for the more valuable children. Nearly half the infants who are alive at the commencement of labor, and yet are born dead to healthy mothers, die solely because they have sustained intracranial injury at the time of birth. Intracranial injury caused by the process of natural selection can be combated in three ways: reducing the size of the skull by induction of labor, enlarging the pelvis by exaggerated posture or pubiotomy, or finding a new exit by cesarean section. Conservative obstetric methods are susceptible of being pursued to the sociological disadvantage of the race by always causing the children of the best cranial stock to run the greatest risks.

**Influence of Certain Social Changes on Maternal Mortality and Obstetric Problems.**—A study of social changes during ninety years has convinced Collier that the practice of obstetrics will tend toward greater difficulties in the coming years; to meet these successfully an improved obstetric service will be necessary. In planning this service, the difference between "other causes" mortality and sepsis mortality ought to be kept in mind. Some of the social and other changes which the last ninety years has seen have not made for easier confinements. The changes of the last twenty years have operated (it appears) to render the average confinement of today just as dangerous as it was twenty years ago, if not more so. In ninety years the improvement is not great.

## Lancet, London

**1:** 733-786 (April 5) 1930

Incidence of Rheumatic Diseases. J. A. Glover.—p. 733.
*Cerebrospinal Metastases from Unsuspected Pulmonary Carcinoma. F. R. Ferguson and W. E. Rees.—p. 738.
Rush Inoculation: Hay-Fever Treatment. J. Freeman.—p. 744.
*Calculi in Urinary Tract Treated by Operation: Two Cases. L. Martindale.—p. 747.
Injuries of Fascial Insertions of Muscles. B. S. Nat.—p. 749.

**Cerebrospinal Metastases from Unsuspected Pulmonary Carcinoma.**—Nine cases of primary lung tumor with metastases giving rise to cerebrospinal symptoms are reported by Ferguson and Rees. No further information is forthcoming as to the cause or the recent increase in incidence. The views of previous investigators as to the existence of a cerebral metastatic syndrome, or peculiar features by which a metastatic cerebral tumor could be recognized, are criticized. A composite typical picture of a metastatic cerebral carcinoma is presented: an elderly patient, with wasting out of proportion to the extent and duration of the cerebral symptoms, early confinement to bed, pyrexia, a short history, with possibly a sudden onset of a psychosis followed by a temporary recovery, radicular pain, vague chest signs or a history of a respiratory abnormality, and a rapid progression to death. Points such as the infrequency of papilledema, speech disturbances, vesical disturbances or multiplicity of cerebral signs do not appear to be of distinctive value. The macroscopic and microscopic appearances of the lung and cerebral lesions are detailed. The necessity for bearing in mind the possibility that a cerebral lesion may be a metastatic carcinoma from the lung or some other source is emphasized. The difficulties in diagnosis necessitate a complete and careful examination, clinical and radiologic.

**Calculi in Urinary Tract Treated by Operation.**—In one of the cases reported by Martindale, two large, symmetrical, pyramidal calculi of exactly similar shape, size, consistency and appearance were found in the bladder of a woman, aged 57. Roentgen examination showed no differentiation of structure, and no central foreign body. The author states that only five of 371 cases under review were in females, and in at least two of these the stone was formed round a foreign body. The second case was one of ureteral stone. A year later a hydronephrotic kidney was removed from this patient.

**1**: 787-842 (April 12) 1930

Perforating Wounds of Eyeball. J. H. Fisher.—p. 787.
*Parapharyngeal Abscess. E. Watson-Williams.—p. 792.
*Antirachitic Value of Irradiated Yeast. S. K. Kon, M. Mayzner and H. Adelfang.—p. 794.
Mechanism of Measles Epidemic. P. Stocks.—p. 796.
Immunization of Fever Hospital Staff Against Diphtheria. E. H. R. Harries.—p. 802.
*Fetal Heart Beat. C. R. Corfield.—p. 803.
Laryngeal Mucus Extractor. A. B. Rufail.—p. 803.

**Parapharyngeal Abscess.**—Watson-Williams relates seven cases as evidence that parapharyngeal abscess resembles in its clinical features peritonsillar abscess; the most striking difference is the absence in the former of edema of the palatal mucosa. The condition should be suspected when a "quinsy" appears to run an anomalous course, or when incision in the usual site above the tonsil fails to locate pus. The abscess tends to point low in the side of the pharynx behind the posterior faucial pillar; it is easily opened here by slight pressure with a blunt instrument, which alone is permissible.

**Antirachitic Value of Irradiated Yeast.**—Kon et al, report on the result of a cooperative investigation started by the State Institute of Hygiene in Warsaw in order to gather reliable experimental information on the practical value of irradiated yeast and other antirachitic preparations. Pure bakers' yeast was used. For activation the yeast was exposed to the radiations of a Hanan quartz mercury vapor lamp. After irradiation, 0.75 Gm. portions of the yeast were weighed out and sent to the children's home for testing. The experiments were carried out on a group of twelve rachitic children, ranging in age from 4 months to 2½ years. Six of them were given irradiated yeast and three controls the same amount of non-irradiated yeast, while three other controls were kept on the institutional diet without any addition. In the course of the investigation, all these children were kept under uniform conditions. The yeast was administered once daily, suspended in the milk mixture, and was readily taken. There were no gastrointestinal disorders. The administration of the yeast was continued even in the presence of intercurrent illness associated with fever. Calcification of the cranial bones was generally the first clinical sign of improvement, craniotabes disappearing in the course of from two to four weeks. This was followed by an increase in muscular tonus. Radiologically, advanced healing could be noticed in the course of one month, while serum phosphorus increased markedly within ten days. After about one month a difference in behavior and activity between the two sets of children became quite noticeable, the soft muscled, flabby, untreated babies contrasting with the playful, energetically kicking treated ones. The rapid rise of the serum phosphorus in the group receiving the irradiated yeast is noteworthy. In a few cases the phosphorus reached a rather high level, but no untoward symptoms whatever were associated with this rise. The serum calcium remained quite normal throughout the experiment in the group of treated infants, though it was low in some of the controls. Routine examination of the urine disclosed a perfectly normal picture. There are no noteworthy differences in the weight increments of the two sets of children.

**Fetal Heart Beat.**—Three separate groups of a hundred patients each were examined by Corfield and with few exceptions the observations were almost identical in each group. It was found that the fetal heart beat in quite normal cases has a wide range, much wider than 130 to 150, with an average of 132; therefore an apparently unduly slow or rapid rate does not necessarily foretell distress or disaster to the child. The average rate lay between 112 and 180 a minute. The position of the maximum audibility of the fetal heart is a fairly reliable guide to the ultimate presentation of the child; no less than 75 per cent were found to be correct. It cannot be said that the fetal heart beat foretells definitely the sex of the fetus, but there certainly appears to be a relationship and a fairly well established range of fetal heart beats at different ages. A fetal heart beat of 141 to 180 in late primiparas and multiparas favors the prognosis of a female child. The chances of a woman having male issue become less as she travels along the child-bearing period. The experiment suggests that the best age of expectation for male issue is between 24 and 25 years of age.

## Japanese J. Gastroenterology, Kyoto

**2**: 1-70 (March) 1930

Method of Estimating Total Acidity of Gastric Juice. K. Inoue.—p. 1.
Gallstone Formation: II. Alkali and Alkaline Earth and Metal Content in Bile. R. Ohta.—p. 19.
Id.: III. Effect of Abnormal Functioning of Vegetative Nerve System on Alkali and Alkaline Earth Metals Contained in Bile. R. Ohta.—p. 32.
*Id.: IV. Influence of Functions of Autonomic Nervous System on Gallstone Formation. K. Kirita.—p. 41.
Id.: V. Formation of Bilirubin-Calcium Stones. K. Kirita.—p. 55.
Oxidation Velocity of Bilirubin. T. Morishima.—p. 60.

**Influence of Functions of Autonomic Nervous System on Gallstone Formation.**—Kirita directs attention to the possible existence of an intimate relationship between the function of the autonomic nervous system and the formation of gallstones. He says that functional anomalies of the autonomic nervous system cause the reaction of bile to suffer a certain change; that is, when the sympathetic nervous system is in a state of excitement, the hydrogen ion concentration of the bile tends mostly to increase, but when the parasympathetic nervous system is in a state of excitement it mostly tends to decrease. The cholesterol content, specific gravity and viscosity of bile also undergo certain changes, which suggest that when the parasympathetic nervous system is in a state of excitement bile is always reduced to a condensed state, a fact that affords strong evidence of an intimate relationship between the function of the autonomic nervous system and the formation of gallstones. Furthermore, the concentration and especially the total quantity of cholesterol excreted in bile increase. The surface tension of bile also undergoes certain variations, but in what manner this is associated with gallstone formation is not elucidated in the present investigation.

## Practitioner, London

**124**: 377-488 (April) 1930

Clinical Aspects of Psittacosis. A. P. Thomson.—p. 377.
Congenital Developmental Familial Diseases, and Familial Anemias and Splenomegalies. F. P. Weber.—p. 386.
*Aspects of Calcium Metabolism in Relation to Therapeutics. J. C. Hoyle.—p. 398.
*Acidosis in Relation to Amenorrhea. A. A. Osman and H. G. Close.—p. 422.
Coxa Vara. N. R. Smith.—p. 432.
Medical Treatment of Gastric and Duodenal Ulcers. J. B. Alexander.—p. 444.
*Perforated Gastric and Duodenal Ulcers. R. H. Enoch and D. J. Harries.—p. 451.
Recent Advances in Treatment of Pulmonary Tuberculosis. P. Ellman.—p. 459.
Treatment of Pulmonary Tuberculosis by Sanocrysin. C. Shaw.—p. 468.

**Aspects of Calcium Metabolism in Relation to Therapeutics.**—From extensive studies made by Hoyle, it is evident that calcium deficiency in clinical medicine is most often secondary to established disease. In such cases calcium treatment may correct the deficiency and, when this has been responsible for symptoms, lead to their alleviation; but in none of these patients does this treatment have any action on the underlying cause of the trouble.

**Acidosis in Relation to Amenorrhea.**—Osman and Close conclude that the hormones concerned in menstrual function may have their action modified by the conditions under which they have to work; that, in fact, they are unable to perform their functions adequately in the presence of an acidosis because this leads to undue waterlogging of the body as a whole or of the specific organs concerned, and that alkalis are of value in some cases in promoting diuresis and ridding the body, or these organs, of excess water.

**Perforated Gastric and Duodenal Ulcers.**—Of the 109 cases analyzed by Enoch and Harries, sixty-six were gastric ulcers and forty-three were duodenal ulcers. The death rate from gastric perforations was much higher than from duodenal perforations: 32 and 11 per cent, respectively. The summary of the fatal cases indicates that extra-abdominal complications were absent in the duodenal cases, but in the gastric cases, in nine out of twenty-one, death was due to the extra-abdominal complications, mainly pulmonary. The prognosis is largely influenced by the nature of the operative treatment, provided this is carried out in the first ten or twelve hours after perforation. Fifty-five cases treated by suture of the ulcer, with or without gastrojejunostomy, swabbing out of the peritoneal cavity and no drainage gave a mortality rate of 7.25 per cent. The mortality rate is raised by drainage of the peritoneal cavity 25 per cent with suprapubic and 50 per cent with local or supraumbilical drainage. Fifty cases treated by operative procedures other than suture, gastro-enterostomy and no drainage showed a mortality rate of 34 per cent.

## Archives des Maladies de l'App. Digestif, etc., Paris

**20:** 1-136 (Jan.) 1930

Dystonia and Dyskinesia of Gallbladder. M. Chiray and A. Lomon.—p. 5.
*Treatment of Gastric Ulcer by Bromides and Chloral Hydrate. A. Landau and G. Glass.—p. 26.
*Nutrition After Gastric Resection. J. Danicico.—p. 40.

**Treatment of Gastric Ulcer by Bromides and Chloral Hydrate.**—In two typical cases of gastric ulcer, Landau and Glass did not obtain good results with silver nitrate, salts of bismuth and protein therapy. The administration of bromides and chloral hydrate, however, did have a favorable effect on the symptoms. The daily administration of from 3 to 4 Gm. of bromides and 1 Gm. of chloral hydrate was sufficient to produce the desired therapeutic effect.

**Nutrition After Gastric Resection.**—Danicico observed that the nutritive balance, in nineteen cases of resection of the stomach, showed a deficiency in the utilization of fat and an insufficiency in the utilization of proteins. The deficiency in the utilization of fat is proved by the lowering of the coefficient of absorption of all fats: in the nineteen cases the minimum value was 74 per cent and the average was 88 per cent. The function of the remaining portion of the stomach after resection has a certain rôle in determining the utilization of fats. The gastric deficit is compensated for by greater intestinal digestive activity.

## Archives de Médecine des Enfants, Paris

**33:** 129-198 (March) 1930

*Carbohydrate Metabolism in Rickets. G. de Toni.—p. 129.

**Carbohydrate Metabolism in Rickets.**—On the basis of a review of the literature and his personal studies in six normal infants and sixteen nurslings with characteristic symptoms of rickets, de Toni concludes that the cerebrospinal fluid of infants with rickets has an average content of lactic acid and of inorganic phosphorus much lower than that of normal infants. The parallelism between lactic acid and phosphorus content points to the close relation between the phosphorus and the carbohydrate metabolism. The author did not find the test of alimentary glycemia reliable, although it was noted that the experimental hyperglycemia appeared to be somewhat increased and was of longer duration in infants having rickets than in normal ones. These facts may be due to the general decrease of metabolism and the lowered functional activity of the cells, especially in the muscular tissue, in children with rickets.

## Bulletin de l'Académie de Médecine, Paris

**103:** 191-206 (Feb. 24) 1930

Antityphoid Vaccination in Mercantile Marine. L. Bernard.—p. 195.
*Treatment of Tuberculosis with Choline Hydrochloride. J. Carles and F. Leuret.—p. 196.
*Insulin in Treatment of Gastric Ulcers. A. Cade and P. Barral.—p. 198.

**Treatment of Tuberculosis with Choline Hydrochloride.**—Examinations of more than 100 blood specimens obtained from patients with tuberculosis or from experimental animals led Carles and Leuret to the conclusion that the resistance to tuberculosis is determined by the equilibrium between glycemia and cholesteremia. A disorder of metabolism, especially with regard to cholesterol, results in more severe and active manifestation of the disease. The authors found that 0.02 Gm. of choline hydrochloride injected subcutaneously either daily or every other day modified the chemical composition of the blood. The cholesterol content increased without a corresponding rise in the glycemia. The condition improved rapidly and was characterized by a feeling of well being. The authors' personal experience concerns thirty-two patients with tuberculosis in whom other treatment had proved ineffective. Of these, eight recovered and ten others showed improvement.

**Insulin in Treatment of Gastric Ulcers.**—Twenty-five patients having symptoms of gastric or duodenal ulcer were treated by the injection of insulin by Cade and Barral. In seventeen who had a chronic condition, considerable relief from pain was obtained. The authors combined the injection of insulin in some of the patients with the administration of dextrose. Further experience with this method of treatment is advised.

## Bulletin de la Soc. d'Obst. et de Gynéc., Paris

**19:** 105-153 (Feb.) 1930. Partial Index

*Angioma of Placenta: Case. Durante and Lemeland.—p. 106.
*Use of Diathermic Bistoury for Ablation of Genital Papilloma in Pregnancy. Le Lorier.—p. 107.
Abdominal Pregnancy with Living Child. Levant.—p. 109.
Epithelioma of Cervical Origin. P. Petit-Dutaillis.—p. 112.
Puerperal Peritonitis. Leroux.—p. 115.
Cysts and Abscesses with Urethral Fistulas in Their Bearing on Gestation. A. Couvelaire and Armand.—p. 119.
Syndrome of Peritoneal Inundation Caused by Rupture of Pelvic Hematocele into the Abdomen. Michon and Ponthus.—p. 122.
Extemporaneous Evacuation of Uterus under Rachianesthesia. Gonnet.—p. 124.
Pernicious Anemia in Eighth Month of Gestation. Voron and Pigeaud.—p. 128.
Cyst of Neck, Probably of Branchial Origin, in the New-Born. Banssillon.—p. 130.
Fatal Hematemesis in a New-Born Infant Due to an Ulceration of Esophagus. Trillat and Bosonnet.—p. 130.
Grave Melena of a New-Born Infant: Etiology Manifestly Syphilitic: Transfusion of Maternal Blood: Cure. Rhenter, Banssillon and Pizzera.—p. 132.
Streptococcemia Followed by Recovery. Trillat and Ponthus.—p. 133.
Hypertrophy of Mammary Gland During Pregnancy. Voron and Banssillon.—p. 136.
Cesarean Section: Four Cases. Éparvier.—p. 138.
Hematoma of Vagina: Two Cases. Rhenter and Pizzera.—p. 139.

**Angioma of Placenta.**—Durante and Lemeland observed a case of angioma of the placenta which presented four definite characteristics: an absence of a villous epithelial covering; an absence of communication with the blood spaces; an abundance of capillaries, and an evolution of the stroma. The pathogenesis of these tumors has been attributed to an infection, mechanical disturbances of circulation and vascular malformations.

**Use of Diathermic Bistoury for Ablation of a Genital Papilloma in Pregnancy.**—Le Lorier asserts that the diathermic bistoury may be used to remove a genital tumor with a minimum of hemorrhage and great ease, and with much less risk than is entailed by surgical treatment.

## Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

**(54):** 129-184 (Feb. 10) 1930

Transmission of Syphilis Through Blood Transfusion. A. Tzanck and Werth.—p. 132.
*Pulmonary Gangrene: Two Cases. P. Armand-Delille and Roudinesco-Weiss.—p. 134.
*Strangulated Umbilical Hernia with Ascites. J. Dargein and Coureaud.—p. 138.
Nervous Disorders and Pseudotabes Due to Ingestion of Acetarsone. A. Porot.—p. 140.
Intoxication and Intolerance. A. Tzanck.—p. 149.
Hypotensive Effect of Garlic. M. Loeper, S. de Sèze and P. Guillon.—p. 157.
*Hypoplastic Anemia Due to Cancer: Relation Between Lipoids and Proteins in Blood. M. Loeper, L. Michaux and S. de Sèze.—p. 162.
Tumor of Anterior Mediastinum with Clinical Symptoms of Acute Leukemia. De Lavergne, Abel and Debenedetti.—p. 169.
Measurement of Speed of Blood Circulation in Man (Fluorescein Test). C. Lian and E. Barras.—p. 175.
Clinical Aspect of Fluorescein Test. C. Lian and E. Barras.—p. 179.

**Pulmonary Gangrene: Two Cases.**—Armand-Delille and Roudinesco-Weiss report the clinical histories of two children, aged 9 and 8, respectively, who had symptoms of pulmonary involvement with a fetid breath. Although *Spirochaeta bronchialis* could not be found in the sputum, injections of anti-

gangrenous serum were given, associated with intravenous injections of arsphenamine. The authors recall the results noted with such therapy in the gangrenous form of Vincent's angina. Both children rapidly recovered after the injections, and roentgen control likewise proved the efficacy of this method of treatment.

**Strangulated Umbilical Hernia with Ascites.**—Dargein and Coureaud's patient, a man, aged 43, whose previous clinical history was negative but who was an alcohol addict, had been feeling ill for three months. A progressive increase in the size of the abdomen with dilatation of the umbilical ring and a hernia at this level were noted; the latter was easily reduced manually. The ascites hindered examination of the liver and other organs. Dietary measures brought considerable relief within the next three weeks and the patient lost in weight. However, he was abruptly seized with severe pain; vomiting occurred, and a large hernia with discoloration of the overlying skin was noted in the umbilical region. Operation disclosed a strangulated direct umbilical hernia. Recovery ensued without complication and the patient was reported in good condition several months later, although he had hypertrophic cirrhosis of the liver.

**Hypoplastic Anemia Due to Cancer: Relation Between Lipoids and Proteins in Blood.**—Loeper et al. report this rare occurrence in their patient, aged 37, who had had persistent symptoms of severe epigastric pain for seven years. About eight years previously appendectomy had been done. The following year a second intervention disclosed subhepatic adhesions which were separated. Three years later a third intervention showed that new adhesions had developed, but again no other pathologic changes were noted. Temporary relief from pain was obtained, but it recurred with renewed intensity and remained obdurate to treatment. Other symptoms became evident and the tentative diagnosis of an intractable ulcer on the lesser curvature was made. The patient had hematemesis coincident with an increase in temperature. Hematuria and melena were noted and a marked discoloration of the skin was evident. Examination of the blood disclosed that a condition of icteric hemolysis persisted, with cells pointing to pernicious anemia of a hypoplastic type. There was likewise an excessive fragility of the blood corpuscles. In spite of three blood transfusions done within the following ten days, the patient died. Necropsy disclosed adherence of the stomach to the pancreas. Two ulcers were noted, one of which had perforated into the pancreas. Microscopic examination disclosed neoplastic degeneration of this ulcer. In the interpretation of this case the authors point to the production of hemolytic toxins which are not evident in simple gastric ulcers nor with primary cancers. A second theory, to the effect that alimentary or bacterial toxins penetrated into the blood through the pancreatic lesion as a portal of entry, likewise appears plausible. The authors studied the chemical composition of the blood of five patients with cancer and anemia. They found that the erythrocytes were more resistant than those of normal blood. Hemolysis in cancer may be compared to that caused by cobra venom. It may be due to a compound containing a serum protein thus far not determined which can be precipitated by alcohol and by acetone and also contains lecithin. The addition of a colloidal solution of cholesterol to the lecithalbumin obtained from anemic patients with cancer destroyed its power of hemolysis or hemofragilization. As a result of their studies the authors advise systematic administration of cholesterol by ingestion or by subcutaneous injection to all patients with cancer.

## Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

**56:** 105-148 (Feb. 8) 1930

*Acute Mastitis During Lactation: Treatment by d'Herelle's Bacteriophage. A. Raiga.—p. 106.
Isolated Fracture of Tarsal Scaphoid. Solcard and Rolland.—p. 112.
Supra-Articular Scapulohumeral Arthrodesis by Means of Osteoperiosteal Graft. R. Massart.—p. 118.
Total Volvulus of Small Intestine and Right Half of Colon. Moulonguet-Doleris and M. d'Aubigné.—p. 122.
*Umbilical Hernia of Embryonic Type. D. Petit-Dutaillis.—p. 130.
Gastro-Enterostomy for Gastric Ulcer in Patient with Hemophilia. P. Emile Weil and R. Grégoire.—p. 136.
*Bilateral Retrogasserian Neurotomy in Double Neuralgia of Trigeminal Nerve. R. Leriche.—p. 139.
Epithelioma of Pharynx and Endolaryngeal Epithelioma: Ablation by Electrosurgical Knife. G. Worms.—p. 141.
Osteochondritis Deformans Juvenilis of Proximal End of Femur. E. Sorrel.—p. 143.
Stricture of Ureter as Complication After Hysterectomy. M. Lœwy.—p. 147.

**Acute Mastitis During Lactation.**—Raiga successfully applied d'Herelle's bacteriophage in more than 500 cases, which included boils, carbuncles, paronychia, suppurative ulcers, abscesses, pyodermatitis, angina, tonsillitis, and colon bacillus infections. He also observed eight cases of acute suppurative mastitis occurring during lactation, and three cases of mastitis without suppuration. The treatment was applied under local anesthesia, the pus being aspirated and the cavity then washed out with bacteriophage. The pain is the first symptom to be relieved, and recovery ensues more rapidly than would otherwise be the case.

**Umbilical Hernia of Embryonic Type.**—Petit-Dutaillis successfully operated on an umbilical hernia in an infant, shortly after birth. A slight discoloration in the upper part of the hernial sac revealed the presence of the liver. The hernia was reduced, and on palpation a bubbling sound was noted. Injury to the liver was prevented by folding the sac to protect Glisson's capsule. The author was able to free the adherent liver without causing a hemorrhage. Recovery ensued without further complications.

**Bilateral Retrogasserian Neurotomy in Double Neuralgia of Trigeminal Nerve.**—Leriche states that in these cases the nerve should be operated on by the temporal route. This method, from his observation, appeared simpler and less dangerous than the method developed by Dandy. His patient, aged 60, had had typical trigeminal neuralgia on the left side eleven years prior to examination at Leriche's clinic. Treatment for syphilis, extraction of teeth, operations on the maxillary and frontal sinuses and alcohol injections at various intervals failed to relieve the neuralgia. She had a temporomaxillary luxation, albuminuria and edema in the legs, and had received treatment for functional disorders of the heart and kidneys. After retrogasserian neurotomy her condition improved, although habitual subluxation of the maxilla persisted. Ablation of the articular disk under local anesthesia, ten days later, relieved this condition, and recovery now ensued without complications. Three and one-half years later the patient returned suffering with neuralgia of the two inferior branches of the right trigeminal nerve. Retrogasserian neurotomy on that side was performed and the patient has been free from pain for the last sixteen months.

## Lyon Chirurgical, Lyons

**26:** 767-913 (Nov.-Dec.) 1929

*Free Autotransplantation of Endometrium into Peritoneal Cavity of Guinea-Pigs. E. Dahl-Iversen.—p. 767.
Torsions of Sigmoid at Both Ends on Intestinal Axis. G. Aigrot.—p. 782.
*Influence of Lumbar Sympathectomy and Ablation of Stellate Ganglion on Sugar Regulating Function of Pancreas. L. Zagni.—p. 788.
Late Results of Unilateral Lumbar Sympathectomy. P. Stricker and J. de Girardier.—p. 797.

**Free Autotransplantation of Endometrium into Peritoneal Cavity of Guinea-Pigs.**—From a study of the literature and from his own experiments, Dahl-Iversen concludes that endometrium introduced into the peritoneal cavity implants itself only where the peritoneum has been traumatized during the operation. Unless menstrual blood possesses especially irritant qualities, its entrance into the peritoneal cavity will not produce the lesion of the peritoneum necessary for the implantation of endometrium.

**Influence of Lumbar Sympathectomy and Ablation of the Stellate Ganglion on the Sugar Regulating Function of the Pancreas.**—Zagni, from his experiments on seven dogs, asserts that the sugar regulating center and consequently the metabolism of carbohydrates are influenced by the abdominal or cervical sympathetic nerves, probably by way of a complicated neurohormonal mechanism, which points to the existence of a close functional relationship between the sympathetic nervous system and the glands of internal secretion.

## Nourrisson, Paris

**18:** 1-64 (Jan.) 1930

Evaporated Milk and Dry Milk. A. B. Marfan.—p. 1.
*Blood Platelets in Normal Nurslings. S. Eckerström.—p. 26.
*Sudden Death of Nurslings Due to Latent Diphtheria: Two Cases. Lesné and Waitz.—p. 32.
Hypervitaminosis of Kreitmair and Moll in Treatment of Experimental Rickets. A. Canelli.—p. 37.

**Blood Platelets in Normal Nurslings.**—Using the micromethod of Kristenson, Eckerström studied the number of thrombocytes in children during the first year of life. The series included one group of forty-six new-born infants, on whom ninety-one examinations were performed during the first week of life, and seventy infants between the ages of 1 week and 1 year. In the first group the thrombocyte count ranged between 180,000 and 250,000. The number increased to 300,000 in the second or third week. In the course of the first year the number of thrombocytes varied between 250,000 and 450,000.

**Sudden Death of Nurslings Due to Latent Diphtheria.**—Lesné and Waitz observed two cases in which death was caused by latent diphtheria. In both cases the throat appeared normal, but a bacteriologic examination of the rhinopharynx showed that diphtheria bacilli were present.

**18:** 65-135 (March) 1930

*Utilization of Vegetable Proteins in Alimentation of Nursling. L. Ribadeau-Dumas, R. Mathieu and L. Willemin.—p. 65.
Edemas and States of Excessive Water Content in First Year of Life. J. Cathala.—p. 82.
Results of Vaccination with B C G. H. Lemaire.—p. 95.
Efficiency of Methods for Encouraging Maternal Breast Feeding of Infants. P. Lereboullet and P. Joannon.—p. 113.

**Utilization of Vegetable Proteins in Alimentation of Nursling.**—If breast milk must be replaced by cow's milk, it is necessary to supply more vitamins. Ribadeau-Dumas et al. found that the addition of soy beans is a good substitute because they contain a large amount of vitamin, especially vitamin A.

## Revue Belge des Sciences Médicales, Louvain

**1:** 777-852 (Nov.) 1929

*Influence of Hormones of Testis on Predisposition to Cancer. L. Jacqmin.—p. 777.
Diseases of Liver and Pancreas: Annual Review. P. Lambin.—p. 811.

**Influence of Hormones of Testis on Predisposition to Cancer.**—Jacqmin concluded from his experiments on mice that castration before or after puberty appears to increase the malignancy of tar tumors and to hasten the appearance of metastases. Castration before puberty has an opposite effect on the receptivity for tar cancer and the receptivity for inoculation cancer. Vasectomized mice exposed to the action of tar did not develop more metastases than did normal mice. The probable hormonal function of the testis is suggested by its influence on the predisposition to cancer. When two factors that predispose to cancer act together, it appears that there is a summation of their respective actions.

## Revue Française de Gynécologie et d'Obst., Paris

**25:** 1-79 (Jan.) 1930

*Enlarged Ovary as Early (First Two Months) Indication of Pregnancy. R. Gilles.—p. 1.
Genesis of Atypical Placenta and Eccentric Insertion of Umbilical Cord. J. Kreis.—p. 13.
Regional Vaccine Treatment of Infections of Uterus and Adnexa. J. Louvel.—p. 32.
*Intermenstrual Congestions: Treatment by Mammary Opotherapy. L. M. Pierra.—p. 37.

**Enlarged Ovary as Early (First Two Months) Indication of Pregnancy.**—Gilles points out that enlargement of an ovary may invariably be recognized within the first and second month of pregnancy, thus constituting a valuable additional guide in diagnosis. The enlargement of the uterus can simulate that produced by a fibroma, especially in cases of interrupted gestation with formation of a mole; therefore the symptom of the enlarged ovary is of value not only for clinical diagnosis but also in legal medicine.

**Intermenstrual Congestions: Treatment by Mammary Opotherapy.**—Examinations of more than 1,000 women disclosed that 360 were suffering from intermenstrual pain and disorders which caused considerable discomfort in many cases. Pierra found that a temporary increase in the size of the ovaries, the uterine tubes and also of the uterus is accompanied by an increased tenderness of the ovaries and the uterus and especially tenderness in the region of the pelvic nerves. A slight distention of the abdomen is noted coincident with symptoms of anorexia, nausea or migraine. Although the etiology of this condition has not been clearly revealed, the author points out that those women between 30 and 40 years of age appear subject to such disturbances who have previously had unrecognized slight inflammations of the genital organs. The intermenstrual congestions of puberty are related to the establishment of menstruation. In either case the etiology may therefore be traced to disorders of ovulation and the symptoms are on a neuro-arthritic basis. Mammary extract in powder form or by injection was administered to more than 200 patients and was efficacious in 176 cases. Permanent relief, however, occurred in only fifty-eight patients, whereas in 118 opotherapy had to be repeated each month to produce relief of the distressing symptoms.

## Revue Française de Pédiatrie, Paris

**5:** 555-654 (Oct.) 1929

Pathogenesis of Anemia in Nurslings. L. Maldague.—p. 555.
Viosterol and Hypercalcemia: Clinical Study. P. Rohmer and L. Marys-saël.—p. 573.
Intestinal Infantilism. E. Stransky.—p. 587.
Pleurisy as Complication of Whooping Cough. V. Mijulowski.—p. 601.
Intranasal Vaccination with Dick's Toxin. S. Kostitch-Yoksitch.—p. 614.
*Periodic Vomiting Caused by Periduodenitis. Kleinknecht, Specklin and Vonderweidt.—p. 618.
*Congenital Volvulus in Nursling: Case. J. S. Anderssen.—p. 622.

**Periodic Vomiting Caused by Periduodenitis.**—In the case cited by Kleinknecht et al., symptoms of the disease appeared when the child was 2 years of age. Abdominal pains were severe and were followed by vomiting. A clinical examination did not reveal the cause of the disturbance, but roentgen examination showed a duodenojejunal occlusion. A successful operation was performed and the child was able to digest her food properly. The origin of the disease was not known, but it was believed to be congenital.

**Congenital Volvulus in Nursling: Case.**—Anderssen observed a case of congenital volvulus in a nursling. Because of an intermittent partial occlusion of the duodenum, the child vomited after every feeding. An operation was performed but was not successful.

**5:** 655-802 (Dec.) 1929

Bone Lesions of Congenital Syphilis in Infants: Osteochondritis. M. Péhu and A. Policard.—p. 655.
Immunity to Measles in Infant Under Normal and Pathologic Conditions. A. F. Canelli.—p. 668.
*Latent Otitis Media as Cause of Digestive and Nutritive Disorders in Infants. S. E. Burghi and C. Gianelle.—p. 681.
*Viscosity of Blood in Infants. V. Mikulowski and H. Chmielewska.—p. 706.
*Purulent Meningitis Due to Pfeiffer's Bacillus in Infants. T. Mogilnicki.—p. 717.
*Severe Anemia and Hemorrhagic Diathesis in Herter-Heubner's Disease (Syphilitic Endarteritis of Cerebral Vessels). B. Strandqvist.—p. 728.
Value of Tuberculin Test in Determining Efficacy of B C G Vaccination. A. Wallgren.—p. 739.
Diagnostic Value of Erythema Nodosum in Tuberculosis in Children. A. Wallgren.—p. 749.

**Latent Otitis Media as Cause of Digestive and Nutritive Disorders in Infants.**—Burghi and Gianelle observed 116 cases of latent otitis media, which comprised 37 per cent of the total number of hospital patients. A predisposing cause of latent otitis was found to be a lowering of resistance caused by dystrophy, paratrophy or serious infectious diseases. The most important symptoms of the disease are fever, loss of weight, vomiting and diarrhea. The loss of weight is attributed to diarrhea and the action of toxins on the cells and tissues. Spontaneous recovery is rare, and unless treated surgically, the otitis may be fatal.

**Viscosity of Blood in Infants.**—Mikulowski and Chmielewska observed the viscosity of the blood in more than 100 children between the ages of 1 and 15. A viscosity of more than 5 indicates an augmentation, and one of less than 4.5 a diminution. Lowering of the viscosity of the blood occurs in children with anemia; augmentation always indicates distur-

bances in the arterial circulation or weakening of the cardio-arterial system.

**Purulent Meningitis Due to Pfeiffer's Bacillus in Infants.**—Mogilnicki concludes that purulent meningitis occurs more frequently in infants than in adults. Purulent meningitis caused by Pfeiffer's bacillus is not very rare; the prognosis is bad. Clinical symptoms are not different from those in other types of purulent meningitis, and only an examination of the cerebrospinal fluid explains the etiology of the disease. Purulent meningitis caused by Pfeiffer's bacillus is found more frequently in Jewish children than in Gentiles, and more frequently in boys than in girls. Purulent meningitis may arise as a complication of grip and influenza.

**Severe Anemia and Hemorrhagic Diathesis in Herter-Heubner's Disease.**—Strandqvist states that certain cases of Herter-Heubner's disease occur in patients with acute anemia, eventually associated with a hemorrhagic diathesis. Generally the anemia is of a secondary type, but in some cases it was found to be a pernicious type. Hypovitaminosis is probably the cause of the anemia and is a result of defective intestinal resorption. Infections of diverse nature constitute the particularly important determining factors. The prognosis is good if the intestinal disturbances are susceptible of amelioration. An abundant administration of vitamin C improves the prognosis.

## Schweizerische medizinische Wochenschrift, Basel

**60:** 213-236 (March 8) 1930

*Injurious Effects of Roentgen Rays on Offspring. H. Guggisberg.—p. 213.
*Danger of Demineralization and of Transmineralization of Foods. T. Lang.—p. 219.
*Solubility of Mercury Salts in Bile. M. Fischer.—p. 223.
Disturbances of Sympathetic Nervous System Following Laryngologic Operation. K. Ulrich.—p. 225.
Permanent Cure of Spring Conjunctivitis by Means of Treatment with Spray and with Cautery. J. Strebel.—p. 227.
Cure of Large Scrotal Ulceration in Diabetic Patient by Means of Hypodermic Injection of Acetylcholine Hydrochloride. F. Wyss-Chodat.—p. 228.

**Injurious Effects of Roentgen Rays on Offspring.**—Guggisberg reviews the literature and also reports his own observations. He discusses the harmful effects of roentgen rays on the fetus, on the unfertilized ova and on the hereditary factors. That roentgen irradiations are harmful when given during pregnancy is proved by experiments on animals and by observation of human beings. The central nervous system seems to be mainly influenced. The harmful effect of roentgen rays on the ova has been demonstrated in animal experiments. Either the ova are no longer susceptible of being fertilized or, if they are fertilized, the fetus dies before it is fully developed. If they mature, they usually are weak and sometimes sterile. Observations on human beings are limited; however, there are indications that disturbances in the central nervous system, mongolian idiocy and constitutional weakness may result from roentgen injuries of the ova. A degeneration of the human race from this cause is not to be feared, since the genetic factors are not impaired. We have as yet no knowledge as to whether harmful effects may become manifest in later generations. In conclusion, the author states that in gynecologic disorders the use of roentgen rays should be limited. Especially during pregnancy is roentgen therapy contraindicated.

**Danger of Demineralization and of Transmineralization of Foods.**—Lang investigated the changes in the mineral contents of foods, especially vegetables, which are effected by the cooking process. Other authors had demonstrated that cooking in water results in a loss of potassium and calcium. But because in most kitchens it is customary to add salt to the water in which vegetables are boiled, the author determined the changes in the mineral content that result from boiling in a 1 per cent solution of sodium chloride. He found that vegetables that were boiled in salt water lost the largest part of their potassium. However, large quantities of the sodium in the cooking water were absorbed by the vegetables. Although cooking in water without the addition of sodium chloride reduced the calcium content of the vegetable considerably, cooking with salt water decreased the calcium content to a much lesser degree and the phosphorus content likewise showed only a slight decrease. If the total amounts of sodium and potassium before and after cooking in a sodium chloride solution are compared, it is found that the contents are greater after cooking. The loss in potassium is more than offset by the absorption of sodium. The decrease in calcium is so slight as to be of minor significance. The author concludes that demineralization results only from cooking in unsalted water, whereas an addition of sodium chloride partly prevents demineralization but causes a change in the composition of the mineral content, which is termed transmineralization. The author thinks that among the mineral substances sodium chloride has a special rôle. It maintains the osmotic pressure in the intercellular fluids, whereas the potassium salts are intracellular substances and consequently have an entirely different function from that of the sodium salts.

**Solubility of Mercury Salts in Bile.**—Fischer asserts that investigations by other authors have revealed that the bile dissolves salts of calcium and of magnesium and thus makes their resorption possible. Because the salts of metals such as mercury are of pharmacologic value, the author made investigations to detect whether the bile is capable of dissolving these. She comes to the conclusion that the bile dissolves the mercury compounds in the intestine and this permits their resorption.

## Archivio Italiano di Chirurgia, Bologna

**25:** 213-368 (Jan.) 1930

Chronic Appendicitis. L. Lazzarini.—p. 213.
*A Sarcoma Developed from Paravertebral Traumatic Muscular Ossification. A. Mirolli.—p. 298.
Functional Condition of Pars Pylorica Gastrica Isolated à la Pavlov. C. Trinchera.—p. 317.
*Linitis Plastica and Cancer. A. Vecchi.—p. 347.
Experimental Studies on Anesthesia. C. de Fermo.—p. 356.

**Sarcoma Developed from a Paravertebral Traumatic Muscular Ossification.**—Mirolli concludes that in his patient, a man, aged 34, there was a direct relation between trauma (a violent fall, five years previously, in which he struck his back) and the lesion, a heteroplastic ossification that had no connection with the adjacent bony system. There developed a genuine neoplasia, which the author regarded as secondary to the ossification that resulted from trauma. He considered the new growth a genuine sarcoma of the polymorphous type developed from the connective tissue surrounding the nucleus of the ossification. If the neoplastic nature of the lesion is admitted, the observation is important not only because of the infrequent microscopic relation observed between ossification and trauma but because it furnishes likewise a contribution to the relation between traumatisms and tumors. As far as the author was able to learn from the literature, this is the third case of a tumor resulting in consequence of an intramuscular ossification secondary to trauma.

**Linitis Plastica and Cancer.**—From a careful examination of the microscopic picture in a case of linitis plastica due to an epithelial neoplasia plainly malignant which came to operation in the Clinica chirurgica of Padua, Vecchi concluded that the tumor is identifiable as a solid cancer, in which at certain points the hypertrophic reaction of the connective tissue dominates and, in part, masks the malignant invasion. Microscopic demonstration of the cancerous nature is not easy at all points. One would be uncertain in some places if one did not have recourse to the staining of the mucin, which brings out the epithelial cells less easily identifiable and which reveals quickly and with certainty the nature of the tumor. One cannot decide on the special type of neoplasm, owing to the peculiar behavior of this tumor of the stomach, which differs from other forms of solid cancer by the characteristic reaction of the connective tissue of the stomach wall and by the presence of numerous epithelial cells rich in mucus, presenting, however, evident similarity to those tumors in the form of invasion of the walls and in the mode of behavior of the lymph node metastases. It is not clear whether the cells with mucus, which constitute one of the peculiar characters of the solid cancer in question, represent epithelial cells in mucoid degeneration, or whether the cells secrete mucus and assume this peculiar aspect, owing to the resistance offered by the connective tissue to the invasion of the cells.

**25:** 369-468 (Feb.) 1930

*Clinical, Anatomopathologic and Experimental Study of Traumatic Aneurysms. V. Sergi.—p. 369.
*Tumors of Round Ligament. M. Einaudi.—p. 395.
Gangrene in Young Man Treated by Suprarenalectomy. N. V. Bedarida. —p. 409.
Volkmann's Ischemic Retraction: Case. L. Durante.—p. 429.
Primary Spindle Cell Sarcoma of Testis. G. S. Donati.—p. 440.
*Preoperative Treatment of Hemorrhagic Diathesis in Retention Icterus. C. Giacobbe.—p. 451.

**Study of Traumatic Aneurysms.**—From his experimental researches on animals (dogs and rabbits), Sergi concludes that it may be well to continue to designate aneurysms as true and false, classifying as true aneurysms those that are circumscribed, spontaneous, due to dilatation of the vessel, and with a sac resulting merely from expanded and thinned arterial walls, and as false aneurysms those that are diffuse, infiltrated, traumatic, due to primary rupture of the arterial tunics and with walls composed of the surrounding tissues. But such a frank and precise differentiation is possible in only a portion of the cases. Contingencies may arise in which a morbid type will present some of the characteristics of each class, so that a sharp differentiation will be impossible.

**Tumors of the Round Ligament.**—Einaudi asserts that tumors of the round ligament are rare; only 200 are reported in the literature. Two thirds of the cases are fibromyomas, 21 per cent are adenomyomas, 5 per cent are sarcomas and 5 per cent are cysts (rarely dermoid cysts).

**Preoperative Treatment of Hemorrhagic Diathesis in Retention Icterus.**—Giacobbe concludes, after studying the action of certain drugs that have been suggested as effective in increasing the coagulability of the blood, that calcium chloride by the intravenous route is the best means of obtaining the result desired. Sodium citrate has a high toxicity and is effective only in the initial period. Dextrose injected intravenously was not found to possess the coagulant action attributed to it.

## Gazzetta degli Ospedali e delle Cliniche, Milan

**51:** 233-264 (Feb. 23) 1930

The Pericolic Membrane. R. Babini.—p. 233.
*Primary Bilateral Hemorrhagic Pleuritis Due to Bacterium Typhosum. A. Gasparini.—p. 239.
Syndromes of Amebiasis in Derna and Surrounding Region. C. Tedeschi. —p. 242.

**Primary Bilateral Hemorrhagic Pleuritis Due to Bacterium Typhosum.**—Gasparini brings out that, in addition to the frequent pleural complications that may occur during the course of typhoid, there is a primary pleural syndrome due to *Bacterium typhosum* and termed pleurotyphoid, which may dominate the clinical picture during the whole course of the typhoid infection. The author describes a rare case of bilateral hemorrhagic pleurotyphoid without abdominal symptoms, and presents certain considerations on the nature and on the pathogenesis of such extra-intestinal localization of typhoid.

## Pediatria, Naples

**38:** 297-360 (March 15) 1930

Cutaneous Local Immunization and Modifications of Schick Test. E. Schwarz.—p. 297.
*Diagnostic Value of Skin Reaction to Milk in Rickets and in Spasmophilia. A. Pagani-Cesa.—p. 306.
*Acute Endocarditis in New-Born Infants. A. Loffredo.—p. 311.

**Diagnostic Value of Skin Reaction to Milk in Rickets and in Spasmophilia.**—Pagani-Cesa considers rickets and spasmophilia in artificially fed children as manifestations of foreign protein anaphylaxis or of intoxication caused by cow's milk (the most frequently used food). In order to prove the hypersusceptibility of infants to cow's milk, and to investigate the rôle of milk in the pathogenesis of rickets, spasmophilia and eczema, the author made a skin test in 460 children (some of them were infants and some were children from 5 to 8 years of age). He used raw milk and boiled milk. The entire group of children comprised 167 sick children (115 cases of rickets, thirty-two of eczema, and twenty of spasmophilia) and 293 normal children. The skin reaction was positive in forty-four (twenty of the sick children and twenty-four of the normal children). The author explains the small number of positive reactions among the rachitic, eczematous and spasmophilic children by stating that when anaphylaxis appears during the period of development of the infant, it causes alterations of the sympathetic nervous system which inhibit the reaction. A skin reaction to milk, determined with the purpose of testing the child's intolerance to cow's milk, is of no value. Children with clinically proved intolerance to milk did not react. The number of positive reactions in the entire group, however, though small, indicates an etiologic relationship between cow's milk and rickets and spasmophilia.

**Acute Endocarditis in Infants.**—Loffredo reports two cases of acute endocarditis in infants, 10 days and 3 months old, respectively. In the first case the correct diagnosis could not be made during life, despite a careful examination of the heart (the child was cyanotic). The second infant, while apparently in good condition, presented a syndrome of intense paleness, loss of weight, gastro-intestinal disturbances, enlargement of the spleen and of the liver, an apex murmur, marked increase in the size of the heart and, finally, heart failure and cyanosis. The diagnosis in this case was sepsis associated with congenital heart disease. In both of the author's cases the anatomicopathologic diagnosis was verrucose endocarditis. Examination failed to reveal evidences of a congenital malformation of the heart. The author believes that this observation is a contraindication to the opinions in the literature, such as those of Marfan, who states that acute endocarditis is very rare during the first year of life and that it is observed only in infants who have a congenital malformation of the heart.

## Policlinico, Rome

**37:** 97-160 (March 1) 1930. Medical Section

*Lung Tumors with Especial Reference to Primary Sarcomas. V. Serra. —p. 97.
Acute Hemocytoblastic Leukemia: Case. G. Lazzaro.—p. 119.
*Influence of Roentgen Therapy on the Leukocytosis in Leukemia. R. Gosio.—p. 128.

**Lung Tumors with Especial Reference to Primary Sarcomas.**—Serra asserts that the incidence of primary malignant tumors of the lungs has been increasing of late years. Carcinomas are much more frequent, sarcomas much more rare, and, of the sarcomas, those with fusiform cells are the most common. Males are affected more than females. All ages are affected. There are no pathognomonic clinical signs for the diagnosis of tumors of the lung. Nor are there any clinical signs for the diagnosis of the sarcomatous or carcinomatous nature of the neoplastic process. The objective examination is fortified by cytologic, roentgen and, if possible, bronchoscopic researches. The presence of a pleural hemorrhagic exudate is a frequent but not constant phenomenon. The presence of a pleural exudate or of elements of the tumor in the sputum has the value of a sure diagnosis, but they may be lacking. Once the diagnosis has been ascertained, it is the duty of the physician to turn the patient over to the surgeon. If the tumor is inoperable, roentgen therapy may be tried. It should be applied with great caution and without too much hope being based on its efficacy.

**Influence of Roentgen Therapy on the Leukocytosis in Leukemia.**—In numerous cases of blood disease, mostly of the leukemic type, Gosio studied the variations in the leukocytosis during roentgen treatment. The leukemic patient who has not been treated responds, as a rule, with a "positive" reaction consisting in a distinct increase in the number of white corpuscles, together with changes in the leukocytic formula, with shifting toward the immature forms. In the course of the treatment, on the other hand, this reaction becomes much less marked, until it can be regarded as "negative" relative to the special hematic conditions of the leukemic patients. This "negative" result of the test is, within certain limits, independent of the absolute number of the circulating leukocytes. The practical interest in the result lies in the fact that, when a reaction is reached that can be regarded as negative, ordinarily later irradiations do not induce more notable diminutions of the white corpuscles, while the anemization of the patient becomes constantly more marked. The author advances in conclusion certain theories by way of interpreting the physiopathologic mechanism of the observed phenomena.

## Riforma Medica, Naples

**46:** 197-236 (Feb. 10) 1930

Neurastheniform Syndrome Due to Slight Concealed Chronic Infections. U. Baccarani.—p. 197.
Cicatricial Stenosis of Pylorus Due to Ingestion of Caustics. M. Samaja. —p. 202.
*Mechanical Means for Diagnosis of Obstruction of Spinal Canal. G. Boschi.—p. 209.
Sanatorium Aid, with Particular Reference to Tuberculous Patients of the War Period. R. Moro.—p. 210.

**Mechanical Means for Diagnosis of Obstruction of Spinal Canal.**—Boschi explains that after the extraction of a small quantity of spinal fluid (5 cc.), especially if done slowly, one will observe, particularly in cases of neuromeningeal lymphatism or meningitis serosa, that the lumbar pressure rises from 1 to 2 degrees. This increase is found to be more marked in cases of obstruction due to compression developing in the spinal cord.

## Revista de Especialidades, Buenos Aires

**4:** 1097-1391 (Oct.) 1929. Partial Index

*Splenic Medication: Functions of Spleen. F. L. Soler.—p. 1097.
Antigen of Negré and Boquet in Treatment of Pulmonary Tuberculosis. F. R. Alsina and E. M. Ochoa.—p. 1108.
Action of Magnesium Sulphate on Intestine: Roentgen Study. A. Bergman.—p. 1125.
*Acute Intoxication Caused by Corrosive Mercuric Chloride: Treatment: Recovery. I. Imaz and F. Martínez.—p. 1145.

**Splenic Medication.**—Soler explains his conception of the mechanism through which splenic opotherapy acts as a hormone stimulator and on the functional tonicity of the digestive, the hematopoietic and the nervous systems. For fifteen years the author has obtained good results from the injection of pig spleen (prepared in an isotonic solution of sodium chloride) in states of protracted convalescence and exhaustion, in chronic digestive disturbances and in cases of malnutrition in which the presence of tubercle bacilli is suspected. The dose is 3 cc. for adults, twice a week. The entire treatment consists of ten injections. The treatment can be used even in early childhood, since it is harmless. The author describes his technic in detail. In cases of extensive pulmonary or pharyngeal tuberculosis, the author says the treatment improves the patient's condition, though the improvement is only transitory. Generally the results of the treatment are observed from the first injection, with the appearance of good appetite and a sense of well being.

**Acute Intoxication Caused by Corrosive Mercuric Chloride: Recovery.**—In cases of acute corrosive mercuric chloride poisoning (when the drug has been swallowed), Imaz and Martínez advise lavage of the stomach with 500 cc. of water in which 30 Gm. of sodium hyposulphite has been dissolved. The authors report the case of a girl, aged 18, who swallowed a tablet of corrosive mercuric chloride. The patient was seen for the first time two days later and presented the clinical picture of acute intoxication. During the first two days she had had diuresis, but on the third day anuria set in and lasted for five days. She also had azotemia (6.18 Gm. of urea per thousand cubic centimeters of blood serum). Besides that, she had a myocardial attack. The treatment consisted in gastric lavage, daily subcutaneous injections of isotonic solution of dextrose, intravenous injections of hypertonic solution of dextrose, small doses of insulin, intravenous injections of sodium hyposulphite and the oral administration of bismuth and some cardiac tonics. The patient recovered.

## Deutsche medizinische Wochenschrift, Berlin

**56:** 425-464 (March 14) 1930. Partial Index

Treatment of Insomnia. H. Molitor.—p. 425. C'td.
*Hyperventilation in Epileptic and in Hysterical Persons. J. Köttendrop. —p. 427.
Acute Appendicitis in Senility. H. Flörcken.—p. 430.
*Determination of Hormonal Content of Urine Following Transfusion of Blood from Pregnant Women. K. Ehrhardt.—p. 431.
*Buttermilk in Infant Feeding. S. Engel.—p. 433.

**Hyperventilation in Epileptic and in Hysterical Persons.**—According to Köttendrop the differential diagnosis between epileptic and hysterical attacks is sometimes difficult. Hyperventilation had been employed formerly as a method of producing attacks in epileptic patients. However, the author also produced hysterical attacks by means of hyperventilation. He subjected twenty-eight epileptic and sixty-one hysterical persons to a hyperventilation test. An attack was produced in only three of the twenty-eight persons with epilepsy. The test of the electrical excitability during hyperventilation revealed in eight cases a reduction of the cathodal opening contraction to less than 5 milliamperes. This is typical for epileptic patients and has a certain diagnostic value, because in none of the hysterical patients was the cathodal opening contraction reduced to less than 5 milliamperes during hyperventilation. It is of course possible that the cathodal opening contraction goes below 5 milliamperes, and it has diagnostic value only in positive cases. Of sixty-one persons with attacks of a psychogenic nature, hyperventilation produced hysteria in forty-seven instances. According to the patients the attacks produced in this manner were identical with the spontaneous attacks. Typical hysterical attacks resulted in 77 per cent of the cases, and this shows that the method of hyperventilation is particularly effective in producing hysterical attacks and therefore may be used for diagnostic purposes.

**Determination of Hormonal Content of Urine Following Transfusion of Blood from Pregnant Women.**—Ehrhardt points out that our knowledge concerning the therapeutic use of the hormone of the anterior lobe of the hypophysis is still limited. Especially is the correct dosage not clear as yet. Animal experiments have proved that if too large doses are given there is danger of ovarian disturbances. On the other hand, if too small quantities are given the desired therapeutic results are not obtained. Since clinical experiments are not practicable, it is important to observe carefully all manifestations produced by this hormone. The author states that in the women's clinic in Frankfort, pregnant women occasionally acted as blood donors. When the patient receiving such a transfusion was not pregnant, the hormonal content of the urine was determined. It was found that during the first twenty-four hours after a transfusion of 500 cc., the urine of the recipient of the blood from the gravida contained the hormone of the anterior lobe of the hypophysis. Analysis of the blood of the donors revealed that each cubic centimeter contained from 1 to 10 units of the hormone. Accordingly a transfusion of 500 cc. would provide from 500 to 5,000 units. Disturbances indicating an oversupply of hormones, especially ovarian disorders, did not become manifest after transfusion of blood from pregnant women.

**Buttermilk in Infant Feeding.**—Engel directs attention to the fact that buttermilk is of great value in the feeding of infants, especially in cases of nutritional disturbances. Because it is generally difficult to procure fresh buttermilk suitable for infant feeding, the author recommends a buttermilk powder which has the same effects as fresh buttermilk, and which is easily prepared.

## Deutsche Zeitschrift für Chirurgie, Leipzig

**223:** 375-428 (March) 1930

Significance for Thoracic Surgery of Disturbances in Conduction of Heart. R. Rütz.—p. 375.
*Practical Significance of Intrapulmonary Injection of Iodized Oils in Diagnosis and Treatment of Surgical Diseases of Lungs. S. Sato and T. Watanabe.—p. 401.
*Conservative Surgery of Acute Empyema of Pleura. J. Jäger.—p. 412.
*Fractures of Upper Extremity of Tibia. W. König.—p. 420.

**Treatment of Pulmonary Suppurations with Iodized Oils.**—Sato and Watanabe have made use of iodized oils not only for diagnostic purposes but also as a means of treatment of gangrene and abscess of the lung, putrid bronchitis, bronchiectasis, and open cavitation in tuberculosis. Good results are reported. The oils are injected directly into the bronchial tree through the mouth. No bad effects are reported. Usually 25 cc. of the mixture was injected into the bronchus of the affected lung. Expectoration was lessened; the bad odor disappeared completely. The cough became less frequent and the amount of sputum was lessened. The temperature quickly fell to normal.

**Surgical Treatment of Empyema.**—Jäger regards aspiration of the pus as being more conservative treatment than rib resection. Aspiration is followed by irrigation with hypertonic

and hypotonic solutions, as these effect absorption of the irrigating fluid favorably. The thickness of the abscess wall may, to a certain degree, be determined by the rate of absorption. Strong antiseptic solutions should be avoided as they kill the bacteria and their liberated endotoxins endanger the life of the patient. The author prefers a 25 to 40 per cent sugar solution to any other. It is injected every day.

**Treatment of Fractures of Upper Extremity of Tibia.**—The points stressed by König are: early diagnosis, which is not difficult; good reposition of the fragments, and immediate application of an extension apparatus to permit of early motion, both active and passive—the most essential factor in treatment. Weight bearing on the knee should not be indulged in too early. The results of the treatment of forty-two cases according to these principles are analyzed.

## Jahrbuch für Kinderheilkunde, Berlin

**127:** 1-126 (March) 1930

*Effect of Sea Climate on Nitrogen Balance in Children. R. Nothhaas and H. Schadow.—p. 1.
Asthma in Nurslings and Small Children. J. Tuscherer.—p. 20.
*Pellagra in Child: Case. W. Lengsfeld.—p. 69.
*Hypochloremic Diabetes Insipidus. K. Klinke.—p. 83.
Glycogen Liver and Fatty Liver: Experimental Study. E. Holzmann.—p. 89.
Dengue in Children. K. Choremis.—p. 104.
*Blood Groups of Children with Scarlet Fever. P. von Kiss and Z. Teveli.—p. 110.
*Cereal Coffee in Feeding of Nurslings and Small Children. P. Markus.—p. 115.

**Effect of Sea Climate on Nitrogen Balance in Children.**—Nothhaas and Schadow studied the nitrogen balance in three children, aged from 6 years and 2 months to 8 years, during their stay at a sanatorium by the North Sea for four weeks. In all three children they noted a definite retention of nitrogen.

**Pellagra in Child: Case.**—Lengsfeld reports a typical case of pellagra in a child, aged 6, who was born and raised in Silesia. The child had never eaten corn but had been on an extremely low protein diet for a long time. As a sign of a concurrent avitaminosis, a keratomalacia developed. Under dietetic treatment the cachectic condition of the patient improved.

**Hypochloremic Diabetes Insipidus: Case.** — Klinke reports a case of hypochloremic diabetes insipidus in a child. The chloride content of both the blood and the serum was definitely below the normal. The sodium content also was decreased, but the amounts of all the other minerals were within normal limits. Klinke believes that diabetes insipidus is caused by disease not of the hypophysis but of the basal portion of the thalamencephalon.

**Blood Groups of Children with Scarlet Fever.**—In determinations of the blood groups of 172 children with scarlet fever, von Kiss and Teveli found that seventy-eight belonged to group O, fifty-nine to group A, twenty-four to group B and eleven to group AB. Of the children in whom complications developed, 82 per cent belonged to group O, 61 per cent to group A, 54 per cent to group B and 54.54 per cent to group AB. The authors emphasize the high percentage, in complicated cases of scarlet fever, of patients who belong to group O.

**Cereal Coffee in Feeding of Nurslings and Small Children.**—Markus applied clinically the experimental observation that the addition of cereal coffee to milk fed to rats results in a fine state of division of the curd found in the stomach at necropsy one hour later. He gave several children a mixture of 100 cc. of milk, 100 cc. of water and 5 per cent of sugar and an hour later withdrew the stomach contents and examined them. The next day he repeated the experiment but replaced the 100 cc. of water by 100 cc. of 6 per cent cereal coffee infusion. He noted that the curd obtained with the milk-water mixture was coarse, whereas the one obtained with the milk-cereal coffee mixture was fine. He then repeated both experiments but did not withdraw the stomach contents until after two hours had elapsed. He noted that whereas a large amount of the milk-water mixture was still present in the stomach, all the milk-cereal coffee mixture had passed into the intestine. The author recommends this form of infant feeding, particularly in diseases in which limitation of the milk intake is indicated.

## Medizinische Klinik, Berlin

**26:** 337-374 (March 7) 1930

Liability of Physician for Incorrect Expert Opinion in Law Suit. G. Strassmann.—p. 337.
Accidental Death by Electricity. F. Pietrusky.—p. 339.
*Transition of Agranulocytosis into Myeloblastic Leukemia. L. Borchardt.—p. 341.
Therapeutic Value of Cold Mud Packs. W. Kern.—p. 342.
Nature of So-Called Pylorospasm in Adults. W. Ruhmann.—p. 343.
*Relation Between Thrombosis and Embolism. W. Joel.—p. 347.
Ambulatory Treatment of Chronic Diseases of Joints, Neuralgia and Myalgia by Means of Nonspecific Shock Therapy. R. Loebel and A. Simó.—p. 349.
Stab Injuries of Brain. T. Földessy.—p. 352.
Examination of Cerebrospinal Fluid by Means of Zeiss' Photometer. W. Wolffheim.—p. 352.
Pathogenesis and Treatment of Diarrheal Disorders in Patients with Tuberculosis. F. Altmann.—p. 355.

**Transition of Agranulocytosis into Myeloblastic Leukemia.**—Borchardt describes the case of a woman, aged 37. The spleen was enlarged and the blood picture indicated a severe disturbance in the formation of the granulocytes. The absence of oxydase reaction confirmed that the functioning of the bone marrow to form granulocytes had ceased. However, in contradistinction to the symptomatology of agranulocytosis as described by Schultz, there existed a decrease in the hemoglobin content and in the number of erythrocytes. Treatment with neoarsphenamine effected an increase in the leukocytes and in the granulocytes, and the enlargement of the spleen disappeared. Several weeks later there developed as complications an extremely painful swelling of the parotid glands and of the mammary glands. Other symptoms indicated pancreatic disorders, but whether an enlargement of the pancreas existed could not be determined. An examination two weeks later revealed the typical aspects of myeloblastic leukemia. The enlargement of the spleen reappeared and several weeks later the patient died. The author points out that the accompanying anemia differentiates the clinical aspects of this case from the usual symptomatology of agranulocytosis. Either there are different forms of agranulocytosis, in one of which there exists only a hindrance to the formation of granulocytes, and in another form of which this symptom concurs with a disturbance of the erythropoiesis, or these are two entirely different disease entities. But the two diseases have one common factor; namely, an arrest in the formation of granulocytes. However, more important than the terminology is an understanding of the pathogenesis. The arrest of the functioning of the bone marrow is followed by a pathologically increased production of immature granulocytes. The author thinks it probable that this sudden change was caused by arsphenamine therapy. He thinks it advisable to discontinue arsphenamine treatment as soon as there is a marked tendency toward improvement. However, further experiences will be necessary to solve this problem completely.

**Relation Between Thrombosis and Embolism.**—Joel criticizes recent statistics on the increasing frequency of embolisms. He points out that in some of these articles the etiology and the correlation of thrombosis and embolism are not sufficiently clear. After careful investigations, he comes to the following conclusions: There exists a relation between postoperative thrombosis and the increased frequency of embolism. It is not proved that the increase in other forms of thrombosis (not postoperative) causes a greater frequency of fatal pulmonary embolisms. There is no evidence for correlations between the formation of thrombi, the intravenous administration of cardiac remedies and embolisms. Statistics are of practical value only if they all consider this problem from the same point of view.

## Münchener medizinische Wochenschrift, Munich

**77:** 429-472 (March 14) 1930

Course of Development of Spirochaeta Pallida: In Memory of Schaudinn, Who Discovered Spirochaeta Pallida Twenty-Five Years Ago. Meirowsky.—p. 429.
Criticism of Tests for Determination of Cardiac Function. E. Spohr and H. Lampert.—p. 430. C'td.
Diagnostic Significance of Marked Differences in Reactions of Indican and Xanthoproteic Tests: New Classification of Uremia. E. Becher.—p. 432.
*Correlation Between Internal Secretion, Predisposition to Infection and Healing of Wounds. H. J. Lauber.—p. 434.

*Pain in Left Hypogastric Region as Only Symptom of Appendicitis in Case of Normal Location of Appendix. M. Behrend.—p. 435.
Placenta Praevia Cervicalis: Its Diagnosis and Treatment. Durlacher. —p. 436.
*Therapeutic Action of Iodized Sesame Oil Used for Diagnostic Purposes. S. Erdész.—p. 439.
New Method for Treatment of Angina Pectoris. J. S. Schwarzmann. —p. 439
Idem. R. Schmidt.—p. 440.
Tragedy of Patient with Cancer of Mamma in the Year 1653. Magg. —p. 441.
Instruction for Use of Jejunal Catheter in Treatment of Gastric and Duodenal Ulcers. H. Rehder.—p. 442.
Therapeutic Results of Feeding Patients with Disorders of Stomach by Means of Duodenal or Jejunal Catheter. K. Gutzeit.—p. 446.
Extract from Testis for Promotion of Granulation and Epithelization in Ulcer of Leg and in Other Cutaneous Ulcers. H. Nagell and J. Langhans.—p. 450.
Significance of Pyelography by Means of Intravenous Injection of Contrast Medium for Demonstration of Urinary Passages in Infants and Children. R. Drachter.—p. 451.

**Correlation Between Internal Secretion, Predisposition to Infection and Healing of Wounds.**—Lauber gives the clinical histories of several patients. In a man with relapsing furunculosis, examination of the blood revealed hyperglycemia. Injections of small quantities of insulin were given and the furunculosis healed in a comparatively short time. A woman in whom one ovary had been removed had frequent attacks of tonsillitis and bronchitis, which generally were most severe during the menstrual period. Before the gynecologic operation she had not been subject to these disturbances. Following medication with an ovarian hormone preparation the attacks at first became less severe and later ceased entirely. A patient with myxedema had an injury on the left hand. The wound was refractory to the usual treatment, and lymphangitis with high temperatures developed. Under the influence of medication with thyroid preparations the wound healed. The author reports two other cases in which thyroid preparations favorably influenced the healing of wounds, and one instance in which the combined use of insulin and of an ovarian hormone preparation effected healing of an ulceration that for ten weeks had been refractory to other therapeutic measures. On the basis of his observations the author concludes that endocrine preparations are helpful in persons with insufficiency of the incretory organs in the treatment of infectious diseases as well as in the healing of wounds. He assumes that the hormonal treatment enhances the defense power of the organism and increases the metabolism in the wounds. However, in the therapy of wounds, the administration of endocrine preparations has to be combined with effective surgical care. The author recommends further investigation of this therapeutic method.

**Pain in Left Hypogastric Region as Only Symptom of Appendicitis in Case of Normal Location of Appendix.**—Behrend describes two patients who complained of severe pain in the left hypogastric region. In both instances operation revealed appendicitis. He also describes a third case in which an abscess existed in the left hypogastric region. The anamnesis revealed that a short time before there had also been pains on the right side. The incision of the abscess yielded pus, and it seemed probable that the suppuration had been caused by a chronic appendicitis. A laparotomy on the right side revealed a completely cicatricially contracted appendix, which was removed. The author thinks that the painfulness on the left side may have been due to bacilli or toxins from the diseased appendix. However, this theory cannot be proved. It is also possible that the symptom is an example of referred pain. The author concludes that in all acute inflammatory processes in the hypogastric region, with pain either on the right or on the left side, the possibility of appendicitis should be thought of.

**Therapeutic Action of Iodized Sesame Oil Used for Diagnostic Purposes.**—Erdész points out that in former years it had been noted that iodized oil, which for diagnostic purposes had been injected into cold abscesses and tuberculous fistulas, also exerted a therapeutic influence. It was assumed that this effect was due to the intensive and continued splitting off of iodine. However, up to now it had not been observed that the iodized sesame oil, which is used for myelography, likewise has therapeutic effects. The author reports the case of a man, aged 33, who had a kyphoscoliosis. After an attack of influenza, pains and paresthesia developed in both legs, walking became gradually more difficult and complete paraplegia occurred. This spastic paraplegia was probably caused by pressure. It was assumed that either the influenza had caused an inflammatory process or the spinal column had been injured by excessive gymnastic exercises to which the patient had subjected himself in order to overcome the kyphoscoliosis. Following cistern puncture, 2 cc. of 40 per cent iodized sesame oil was injected. Roentgenoscopy two hours later revealed that the contrast medium had become blocked in the region of the eighth thoracic vertebra. This was caused by a myelitis which in turn was due to a spondylitic vertebral pressure. In the following days the patient noted an improvement. He could move his feet and later his legs, and gradually the paraplegia disappeared completely. Another roentgen examination showed that the largest portion of the iodized sesame oil was still in the region of the eighth vertebra, but a small quantity, about the size of a pea, was now visible farther down. The recovery is still progressing.

## Wiener klinische Wochenschrift, Vienna

**43:** 321-352 (March 13) 1930

*Surgical Treatment in Disorders of Sugar Metabolism. F. Depisch, R. Hasenöhrl and L. Schönbauer.—p. 321.
Icterus Gravis (Acute Yellow Atrophy of Liver), Oliguria and Pulmonary Edema. L. Hess.—p. 324. C'cn.
Indications for and Contraindications to Pneumothorax Treatment in Tuberculous Patients with Emphysema. H. Schipper.—p. 327.
Intraperitoneal Genital Hemorrhages in Absence of Pregnancy. K. Frachtmann.—p. 329.
Practical Value of Percutaneous Neoarsphenamine Test for Detection of Tolerance or Intolerance Toward Neoarsphenamine. O. Glassberg.—p. 332.
Dosage of Thyroid Preparations and Pancreatic Disorders During Childhood. E. Nobel.—p. 333.
Methods of Treatment in Various Forms and in Different Stages of Nephritis. V. Kollert.—p. 334.

**Surgical Treatment in Disorders of Sugar Metabolism.**—In the first part of the article Depisch et al. discuss the theoretical principles and the practical value of the surgical methods for treating diabetes that have been advocated by other authors. The methods are: (1) ligation of the pancreatic duct; (2) Mansfeld's method of ligation of the pancreatic tissue in the region of the head of the pancreas; (3) ligation of the excretory duct of the parotid gland, and (4) denervation of both suprarenals according to Ciminata. The first three methods aim to effect directly or indirectly an increased production of insulin. The fourth method, however, is based on the principle of weakening the counterregulation of the islands of Langerhans and thus restoring the equilibrium that had been disturbed by insulin deficiency. The authors further describe their own method, which is likewise based on this principle of weakening the counterregulation of the insulin. Their method consists in a division of the sympathetic nerves that pass through the hepatoduodenal ligament. Thus all sympathetic nerves and some of the vagal fibers that lead to the liver are severed. The authors hoped that by means of this procedure the entire nervous counterregulation of the liver would be excluded. This operation was performed first on normal dogs and later on animals in which a portion of the pancreas had been extirpated. The experiment proved that the alimentary blood sugar curve, in normal dogs as well as in those with a partially extirpated pancreas, may be influenced by the denervation of the liver. A reduction in the sugar elimination of the liver is effected. The authors also attempted to influence the sugar metabolism of the peripheral tissues on the basis of the nervous counterregulation. They assumed that this hypothetic counterregulation in the tissues was probably produced by the sympathetic nerves that surround the arteries and accordingly they performed a periarterial sympathectomy on a dog with a partially extirpated pancreas in which denervation of the liver had not been entirely successful. Four weeks after this operation the blood sugar curve indicated that the results were not favorable. However, nine weeks later it was normal again and the hypoglycemic phase was even more marked than it is ordinarily. It is assumed that the effect of this procedure is due to an increased sugar absorption by the tissues, which in turn is caused by the exclusion of sympathetic nerves that otherwise check the sugar resorption. It is as yet still questionable whether a denervation would be

practical for the treatment of diabetic patients. In the event that this method could be applied in human beings, it would be indicated in instances in which there exists a strong nervous regulation of the sugar metabolism, especially in persons with a resistance to insulin. Thus far none of the surgical methods seem practicable for the treatment of diabetic patients. However, the authors encourage further investigations.

## Zeitschrift für klinische Medizin, Berlin

**112:** 257-476 (Feb. 20) 1930

*Elimination of Ammonia by Kidneys in Nephrosis. A. Magnus-Levy.—p. 257.
*Leukocyte Picture in Nephritis. V. Kollert and K. Paschkis.—p. 275.
Specific Dynamic Action of Food. E. Krauss.—p. 289.
Diabetes Mellitus: Ketone Body Content of Blood and of Vesicle Serum. F. Stroebe.—p. 312.
*Ketone Body Content of Blood in Diseases of Liver. G. Scherk.—p. 317.
Rapid Production of Vesicles by Means of Intracutaneous Injections of Aqueous Solutions of Urea. H. Hahn and E. Schröder.—p. 325.
Joint Transudates. E. Risak and W. Winkler.—p. 356.
Suprarenals in Relation to Leukopoiesis. I. Barta.—p. 371.
Stokes-Adams Disease: Case. A. Grassberger.—p. 388.
*Arterial Pulsation of Liver in Aortic Insufficiency. O. Satke.—p. 414.
Defect in Atrial Septum Combined with Mitral Stenosis and Atrial Liver Pulse. W. Dressler and H. Rösler.—p. 421.
*Obesity: Treatment with Thyroid Preparations. S. A. Holböll.—p. 437.
Creatine Metabolism in Diabetes Mellitus. K. Pákozdy.—p. 442.
*Cirrhosis of Liver: Etiology. O. L. E. de Raadt.—p. 447.
Clinical Aspect of Acute Leukemia. K. Thums.—p. 452.
Problem of Obesity. A. Magnus-Levy.—p. 468.

**Elimination of Ammonia by Kidneys in Nephrosis.**—On the basis of a study of eleven cases of nephrosis, Magnus-Levy states that in this condition, contrary to what is true in nephritis, the elimination of ammonia is not decreased. The amount eliminated is usually considerably larger than the amount eliminated by normal kidneys and in some cases is extremely large. In the individual case of nephrosis the amount of ammonia eliminated is highly irregular and shows great fluctuations. The ammoniuria is not the result of an increase in the organic acids, as in diabetes, but is primary and is apparently the expression of an irritation of the diseased organs. When the nephrosis is complicated by an acute infection or by arteriosclerosis or nephritis, these conditions exert a predominant action on the elimination of ammonia and the amount is decreased.

**Leukocyte Picture in Nephritis.**—In 103 differential leukocyte counts made with blood from forty persons with nephritis, Kollert and Paschkis found that in 26 per cent of the patients the leukocyte count was higher than normal, but that this increase was never marked. Only four times were values higher than 15,000 (maximum 19,000) observed. In some of the cases there was a shifting of the neutrophils to the left. The greatest relative increase in number was shown by the eosinophils. The authors emphasize the fact that the differential leukocyte count revealed a normal picture in only eight of the forty patients.

**Ketone Body Content of Blood in Diseases of Liver.**—Scherk determined the ketone body content of the blood of eighty persons with various diseases of the parenchyma of the liver. He found that in a large number of the cases the ketone body content of the blood was increased. To demonstrate this increase it is frequently necessary to make daily determinations for several days because it is not constantly present. In some of the cases an increase in the ketone content of the blood could not be demonstrated even by repeated examinations.

**Arterial Pulsation of Liver in Aortic Insufficiency.**—Satke reports two cases of aortic insufficiency that do not conform to Rosenbach's views concerning the origin of the arterial pulse of the liver in this condition. He believes that, just as in the arterial pulsation of other organs, in the arterial liver pulse an important rôle is played by anomalies of the blood vessels, particularly an abnormally large diameter of the hepatic artery.

**Obesity: Treatment with Thyroid Preparations.**—Holböll noted clinical signs of hyperthyroidism in ten of twenty-five persons treated for obesity by means of thyroid preparations. In the same patients and in these only he also noted an acceleration of the erythrocyte sedimentation. He therefore considers the erythrocyte sedimentation speed a valuable index of the effect of thyroid preparations in the treatment of obesity.

**Cirrhosis of Liver: Etiology.**—According to de Raadt, the toxic agent in the pathogenesis of cirrhosis of the liver is the intestinal ammonia, which is converted into urea by the liver. All conditions that increase this conversion to a considerable extent and for a long time finally lead to cirrhosis of the liver. These conditions are a vegetarian diet with its low nitrogen content and chronic gastro-intestinal disturbances (alcoholism).

## Kazansky Meditsinsky Jurnal, Kazan

**26:** 119-232 (Feb.) 1930

Changes in Kidneys in Children with Infectious Diseases. Y. V. Makarova.—p. 121.
Treatment of Malaria by Hypodermic Injections of Quinine. O. A. German and V. N. Korobkina.—p. 132.
*Urobilinogen in Urine: Reaction in Infectious Diseases. G. F. Shtykaleva.—p. 137.
*Changes in Blood During Administration of Ultraviolet Rays. P. V. Netchaeva.—p. 143.
Surgical Diathermy: Used as a Cure for Cancer of Lower Lip. A. G. Lanovsky.—p. 148.
Intestinal Stricture and Ileus. E. N. Avrova.—p. 153.
Hernia of Testis. V. G. Potapov.—p. 158.
Dangers of Diffuse Peritonitis. P. V. Manenkova.—p. 164.
Treatment of Gonorrhea: O. Sach's Method. T. Y. Rotshteyn.—p. 177.
Requirement of Internship for Graduation. M. J. Mastbaum.—p. 181.
Formation of Bone in Stomach Wall After Operation for Ulcer. V. E. Rodionov.—p. 187.
Formation of Bone in Lung: Case. T. Tchetchuevoy.—p. 188.
Tubal Pregnancy. B. M. Bekkera.—p. 191.
Pneumococcus: Bacteriologic Study. E. V. Mirtovskaya.—p. 193.
Radiotherapy: Its Importance in Nerve Diseases. R. Y. Gasul.—p. 196.
Importance of Teaching Dangers of Venereal Diseases. F. G. Muchamedyadov.—p. 199.

**Urobilinogen in the Urine: Reaction in Infectious Diseases.**—Shtykaleva concludes from her clinical studies that the urine of patients with any infectious disease contains more urobilinogen than does normal urine. The amount of urobilinogen in the urine depends on the disease; the greatest amount was found in patients who had scarlet fever, pneumonia and typhus. The urobilinogen in women is greater than in men. Children have less urobilinogen in the urine than adults. It is believed that this reaction of urobilinogen has diagnostic and prognostic value.

**Changes in the Blood During Administration of Ultraviolet Rays.**—Netchaeva asserts that when children with peritonitis, rickets, anemia, tetany, spondylitis and other diseases common to childhood were exposed to ultraviolet rays there was a marked increase in hemoglobin and in the number of erythrocytes and leukocytes. The eosinophils especially were increased.

## Klinichesky J. Saratov. Universiteta, Saratov

**7:** 1-104 (Jan.) 1930

Concentric Fibroma: Etiology and Prophylaxis. N. M. Kakyshkin.—p. 1.
Etiology of Lupus. A. F. Uchin.—p. 15.
*Werlhof's Disease with Cerebral Hemorrhage: Case. V. A. Ershov.—p. 29.
Subcutaneous Rupture of Kidney. N. N. Nazarov.—p. 39.
*Giant Sarcoma: Two Cases. A. A. Nikolski.—p. 43.
Peripheral Facial Paralysis in Tabes: Case. A. P. Shtess.—p. 47.
Schizoid Conditions. S. M. Schelichowsky and V. U. Tscherjapkin.—p. 53.
Glaucoma: Chief Methods of Treatment. B. M. Malkin.—p. 61.
Study of Sex Life Made in the Astrakhan Medical Institute. A. D. Menshov.—p. 77.

**Werlhof's Disease with Cerebral Hemorrhage: Case.**—Ershov states that little positive proof has been found of cerebral hemorrhage in conjunction with Werlhof's disease, but in the clinic of Saratov, a boy, aged 15 years, was treated for the disease and a postmortem examination showed that death was caused by cerebral hemorrhage.

**Giant Sarcoma: Two Cases.**—Nikolski reports two cases of giant sarcoma. The first patient was a woman, aged 49. A swelling over the head of the humerus, accompanied by severe pain, prompted her to go to the clinic. The growth increased in size; the pain became much worse and could be abated only by giving morphine. The tumor was removed successfully. The second patient, a woman, had a large tumor on the right buttock. When the tumor was the size of an "apple" she massaged it, but that did not affect its growth.

When first seen at the clinic, the growth measured 82 by 67 by 56 cm. The patient was unable either to sit or to stand. In fact, any movements of the body were almost impossible. An operation was suggested, but the patient refused it for fear that she might lose her life. The exact origin of the tumor is not stated.

## Russkaya Klinika, Moscow

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History of Polyclinic of Moscow University. D. M. Rossiyskiy.—p. 655.
Average Sphygmomanometric Pressure. N. P. Razumov.—p. 657.
*New Theory on Angina Pectoris. B. A. Egorov.—p. 665.
Relation of Internal Secretions to Otolaryngology. E. N. Malyutin.—p. 671.
Treatment with Thyro-Iodine. L. M. Ivanov.—p. 683.
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*Rôle of Endocrine Glands in Pathogenesis of Epilepsy. I. A. Brodsky.—p. 700.
Sanatorium Treatment of Diseases of Endocrine Glands. N. A. Shereshevsky.—p. 706.
Observations on Hereditary Chorea. L. S. Munor.—p. 713.
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Rhythmic Hyperthermia as a Phenomenon of Cyclothymia. V. K. Choroshko.—p. 738.
*Familial Diseases of Cerebellum. A. O. Chatchaturov and V. K. Kaniovskaya.—p. 749.
Gonorrheal Neurosis. V. V. Dechterev.—p. 759.
"Epituberculous" Infiltration of Lungs. A. E. Prozorov.—p. 764.
Tuberculosis and Its Relation to Diseases of Stomach. A. E. Yarotsky.—p. 772.
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Chronic Appendicitis. A. P. Langovoy.—p. 783.
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*Treatment of Baldness. G. I. Meshchersky.—p. 798.
Etiology of Idiopathic Progressive Atrophy of Skin. A. Jordan.—p. 801.
Nonsurgical Therapy of Surgical Tuberculosis. L. A. Rozen.—p. 823.
Cardiovascular System in Nephritis. N. A. Kabanov.—p. 836.
Pyeloduodenal Fistula as Result of Pyonephrosis. N. N. Terebinsky.—p. 856.
Nitrogen Equilibrium During Starvation. M. N. Shaternikov.—p. 860.

**New Theory on Angina Pectoris.**—Egorov states that disturbances of the sympathetic nervous system are sometimes caused by sudden fluctuations in the amount of blood in the arteries that supply it and by hyperemia. The use of glyceryl trinitrate was found to be beneficial, as it tends to dilate the veins and arteries and to allow a more regular blood flow.

**Rôle of the Endocrine Glands in Pathogenesis of Epilepsy.**—Brodsky asserts that a vital rôle is played by the endocrine glands. In four severe cases of epilepsy, a parathyroid from a sheep was transplanted into the patients and the severe epileptic attacks ceased temporarily. In one case the attacks recurred seven months after the operation, while in another patient who has been under observation for seven years there was no recurrence of the attacks.

**Familial (?) Diseases of the Cerebellum.**—In one family studied by Chatchaturov and Kaniovskaya, three sons had cerebellar disease. The sisters showed no symptoms of cerebellar disturbances. The boys all had suffered from infectious diseases when they were about 4 years old, and after recovery they had been temporarily disabled. Since the sisters showed no disturbances, it may be concluded that previous disease and not hereditary traits caused the cerebellar diseases in the boys.

**Treatment of Baldness.**—Meshchersky asserts that men become bald because of an inflammation of the skin of the head. To remedy this condition he proposes that the scalp be washed well with sterilized milk. No experiments have as yet been performed; therefore no positive conclusions can be drawn.

## Finska Läkaresällskapets Handlingar, Helsingfors

**72:** 99-180 (Feb.) 1930

*Blood Sugar Curve in Acute Hepatitis After Injection of Epinephrine. W. Sucksdorff.—p. 99.
*Tetany in Conscripted Soldiers. B. von Bonsdorff.—p. 108.
Increased Bone Conduction in Tuning Fork Tests. F. Leiri.—p. 135.
Frequency of Venereal Disease in Helsingfors Since 1900 and of Syphilis in Helsingfors and Stockholm, in Finland and Sweden, Since 1910. N. E. Wilén.—p. 147.

**Blood Sugar Curve in Acute Hepatitis After Injection of Epinephrine.**—Sucksdorff's investigations in twelve cases of acute hepatitis, one of acute yellow atrophy of the liver, and one of diffuse carcinomatosis of the liver reveal an abnormally low rise in the blood sugar curve after the injection of epinephrine. The change may appear almost directly after the start of the disease or occasionally somewhat later; may reach its maximum after the jaundice has begun to recede, and may continue for a considerable time after the disappearance of the jaundice. The blood sugar curve after the injection of epinephrine may be valuable in differentiating between jaundice due to biliary stasis and parenchymatous pathologic conditions of the liver with jaundice.

**Tetany in Conscripted Soldiers.**—Von Bonsdorff discusses four cases observed in the spring of 1929. He advises hyperventilation in addition to the usual tests (Chvostek, Trousseau, Erb) in the differential diagnosis when indefinite neurologic symptoms or spasms, possibly combined with visceral disturbances, suggest tetany.

## Norsk Magasin for Lægevidenskapen, Oslo

**91:** 265-368 (March) 1930

*Pathologic Changes in Heart Illustrated by Necropsies During Six Months. E. Hegge.—p. 265.
*Pirquet Tests and Vaccination with B C G in Trysil from 1927 to 1929. O. Scheel, R. Schultz-Haudt and T. Skaar.—p. 279.
*Mineral Metabolism During Pregnancy and Lactation, with Especial Regard to Prophylaxis Against Rickets and Dental Caries. K. U. Toverud and G. Toverud.—p. 286.
Operation in Extra-Uterine Pregnancy with Living Mother and Living and Viable Child. K. Haugseth.—p. 304.
*Paratyphoid B Carrier Eliminating Bacilli in Urine: Recovery After Nephrectomy. A. Brekke.—p. 306.
*Hemoglobin Content of Blood in Women Before and After Delivery. A. Schrumpf.—p. 311.
*Cancer of Lip: Unusual Case. G. R. Moe.—p. 323.

**Pathologic Changes in Heart Diseases.**—Hegge discusses the pathologic conditions in eight cases representing acute and chronic changes in coronary sclerosis, abscess of the heart, and tumor of the heart.

**Pirquet Tests and Vaccination with B C G in Trysil from 1927 to 1929.**—Scheel et al. find that the skin allergy after Pirquet's test remains constant, or nearly so, for from one to two years. A positive cutireaction occurs after vaccination with B C G, the skin infiltrations and abscesses being more frequent after cutaneous than after subcutaneous vaccination. Vaccination with B C G has given certain immunization.

**Mineral Metabolism During Pregnancy and Lactation.**—The Toveruds conclude that a diet deficient in calcium, phosphorus and vitamins during pregnancy and lactation predisposes the offspring to rickets and dental caries, and therefore advise a lactovegetable diet during this time, with the addition of cod liver oil during the dark season.

**Paratyphoid B Carrier: Recovery After Nephrectomy.**—In Brekke's patient, a carrier for five years, with a history of occasional pain in the right lumbar region, the results of examination pointed to more marked infection of the right kidney than of the left. Extirpation of the right kidney was followed, after more than ten months, by recovery. Macroscopic changes were not seen in the kidney, but there was a probable focus in the right ureter; obstruction of the ureter is also believed to have contributed to the maintenance of a diffuse infection, especially in the right kidney.

**Hemoglobin Content of Blood in Women Before and After Delivery.**—Schrumpf made 1,506 hemoglobin analyses before and after delivery. More than 60 per cent of the antepartum and 65 per cent of the postpartum tests, and more than 80 per cent of the postpartum analyses in cases with hemorrhage, showed reduction of the hemoglobin content of the blood below the normal minimum. He is inclined to attribute the decrease in hemoglobin during pregnancy and birth partly to the increase of plasma but especially to the loss of iron to the child. Treatment with iron is recommended in cases with a highly reduced hemoglobin before and after delivery.

**Cancer of Lip: Unusual Case.**—In Moe's patient the lip cancer, which in two or three months attained the size of a plum, gradually decreased in size and in the course of ten or eleven months disappeared completely. At necropsy metastases in the regional lymph nodes were microscopically diagnosed as cancer.